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ECONOMICS OF THE INDUSTRIAL SYSTEM

BY

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PREFACE

THE repeated calls for new editions of a smaller book on economics from the same publishers have encouraged the author to prepare this further volume, which, it is thought, may prove useful to those who wish to make a more detailed study of the subject. The first book, *The Substance of Economics*, was compiled in summary form, which, despite its apparent appeal to examination candidates, permitted of only a limited amount of analysis and description. In this work the writer has singled out for fuller consideration the structure and operation of industry, and some of the more important problems of valuation and income that arise. Part I, which deals with the system of production, is for the most part descriptive. In Part II, which is given up to the theory of value, the treatment is more analytical though none the less realistic. Part III, which is mainly concerned with the apportionment of the social income among the providers of labour and property, is also largely theoretical, but the reasoning is never allowed to lose contact with actual economic conditions and institutions.

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H. A. S.

SEPTEMBER, 1931

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PART I

THE SYSTEM OF PRODUCTION

ECONOMICS OF THE INDUSTRIAL SYSTEM

SECTION 1

INTRODUCTORY

In a world of changing industrial structure and public policy a knowledge of economics, and its relationship to the other social sciences, is of first importance. Largely for convenience of exposition, the study of the industrial system follows the order of production and consumption, exchange and distribution. The principles of valuation, however, are fundamental and, subject to certain conditions, govern all forms of economic activity.

The Importance of Economics

It is a healthy sign that people are taking an ever-increasing interest in the workings of the industrial system and in the principles that underlie all economic relations. It is now generally recognized that the economic structure has not evolved as a result of blind natural forces, beyond the power of man to control, but that, as man himself is responsible for moulding the existing system, he should be able to modify and remove the abuses and defects that are, under prevailing conditions, so liable to arise.

This view marks a distinct step from the notion of *laissez-faire* or economic freedom current in the early nineteenth century, when so much of the economic doctrine that influences thought even to-day first saw light. The political theorists of that time emphasized what they considered to be a close harmony between private interest and public advantage. They urged that neither the central nor any other authority had the right to interfere with what was deemed to be the "natural" order of society. The economists backed them up with the weighty argument that public intervention was bound to hinder the material progress of the nation. Their opinion certainly seemed to be supported by the considerable advance in the national wealth during those years, much of which was largely attributable to individual enterprise and initiative.

But in more recent years the doctrine of "let alone" has had to face an increasing volume of criticism. People have gradually realized that an improvement in economic wealth is not always accompanied by an advance in social welfare. The long-taught principle that what is good for the individual is necessarily good for the community does not command the same facile acceptance that political and economic thinkers of a century ago gave to it. There is still, of course, considerable difference of opinion on the *degree* in which public interference is desirable, but there are few nowadays who show unswerving adherence to the principle of non-interference. The policy and programme of the supposed reactionary parties of to-day would have seemed beyond the dreams of the most radically minded only a few generations ago.

Under such conditions a knowledge of the workings of the industrial system becomes more essential than ever. Both in national and local affairs the electorate and their representatives are asked to pass judgment on proposals that, for good or ill, increasingly affect the economic welfare of the people, and whether the judgment turns out to be sound or otherwise depends largely on the understanding of the economic principles involved.

Unfortunately, many would-be reformers, in their enthusiasm for social improvement, give insufficient attention to the working of the existing system and the basis on which it rests, with the possible result that the prescribed cure turns out to be worse than the complaint. The voter, on his part, is confronted with all kinds of specious remedies for the troubles that beset him, most of them entailing some further interference with or modification of the economic machine, and, as likely as not, he "falls for" the nostrum that is put forward in the most plausible guise. It is obvious that one should have a thorough knowledge of the prevailing economic order before embarking upon any scheme for its reconstruction. The present system rests largely on the foundation of private property. The merits of this basis should be properly assessed before deciding in favour of another. Free enterprise and the right of private contract are also at the basis of the existing structure. Here, too, the functioning of these conditions should be fully known and judged before a new programme, involving perhaps a change in such institutions, is embarked upon.

THE SCOPE OF ECONOMICS

Having entered upon a study of economics, however, the newcomer soon discovers the limits of the subject, particularly if his chief interest is to discover some practical rules for the improvement of society. Economists are the first to point out that the science they profess deals with only one aspect of human behaviour. They take pains to point out, with perhaps undue modesty, that they are content with analysing and explaining the economic system as they find it. They are not concerned, they say, with conditions as they would like them to be under a different moral order, with a system in which the desire for gain was not the chief motive. Such considerations, they aver, belong to ethics rather than to economics. Similarly, they usually take pains to dissociate their specific treatment of the subject from politics, jurisprudence, psychology, and the various other social sciences that deal with the several manifestations of human thought and action. But, while it is necessary to draw some line between these departments of inquiry, for their range is so wide that no one person can satisfactorily study them all, there is a certain danger lest the compartments should become too watertight and independent. These sciences have man as their central and common factor, and their respective teachings, collectively as well as individually, are of help in throwing light on his problems.

In this volume we are primarily concerned with investigating the operation of the existing industrial system, and not with advancing or criticizing any proposals for its reform or reconstruction. Political, psychological, and other non-economic considerations need therefore be taken into account only in so far as they help to a clearer understanding of this system. Our survey will be as much descriptive as analytical, for economics is a realistic science and a knowledge of the actual industrial structure is necessary before the governing principles can be ascertained and their significance understood.

Production and Consumption

In the first part we shall be chiefly occupied with an examination of the economic conditions under which wealth is produced, with the work that man performs in moulding and modifying these conditions, and with the characteristics of industrial organization in general. Production has a wider significance than is commonly supposed. It comprises not only the activities that go to the actual making of goods in the purely physical sense, but also those that add a utility of a less tangible or obvious kind. Some utilities are elemental; they are not the result of labour, but are possessed by commodities in their natural state. The utility of spring water, for example, in quenching one's thirst, is an attribute of this type. A person who carries water from an oasis into the desert adds nothing, of course, to the inherent quality of the water, but he does add what the economist describes as a utility of place, for a given quantity of water has a relatively higher utility in the desert than in the oasis. Further, a person who stores the water from a period of heavy rains to one of drought adds a utility of time, for the water in the second period affords a comparatively greater satisfaction.

People, therefore, may render an essential service to production, though they are not engaged in the growing or manufacturing of goods. They are producers, even though the articles they deal with undergo no physical change at their hands. The transport services provide a utility of place; warehousemen supply a utility of time; bankers, accountants, shopkeepers, clerical workers and others, all play their part in the complex organization entailed in the production of wealth. It is thus incorrect to describe the production of an article as complete when it leaves the actual maker, for the full act of production is not achieved until the commodity is in the possession of the consumer.

If production is the creation of utilities, consumption might be defined as the destruction of utilities. But this description, though literally true, is apt to be misleading, for consumption, though in a sense the opposite of production, may be simply a stage in the productive process. Wool is consumed in the weaving of cloth; cloth is consumed in the making of suits; throughout all the stages, from the clipping of the raw wool to the selling of the garment, allowance has also to be made for the "consumption" of machinery through wear and tear and obsolescence. Some economists have therefore distinguished between "productive" and "unproductive" consumption. By the one, they mean the consumption that is really a stage in production; by the other, they mean the final consumption of the article for its own direct utility. This distinction is helpful, provided that the "productive" consumption is not taken to be more important or socially necessary than "unproductive" consumption—an interpretation which might easily be drawn. Where goods are used up lavishly and wastefully, the consumption is unproductive in every sense. But, where they are employed in promoting the well-being and efficiency of the consumers, the result is likely, on the whole, to be distinctly beneficial. Consumption, not production, is the ultimate aim of all economic activity.

VALUATION AND DISTRIBUTION

Following what is, in the main, a descriptive account of the industrial system, we shall in the second part of the volume enter more deeply into the basic principles that underlie all economic activity. In valuation we reach the central problem. We study value, not merely because we want to know the degree in which a commodity will exchange for another, but because, having that knowledge, we can better understand the working of the economic machine as a whole. The production of wealth is studied first, partly for reasons of simplicity and partly to provide a background, but the account of it is necessarily incomplete until the principles of valuation have been worked out and applied. The value of a commodity is naturally a first consideration in the minds of those who initiate production. The relationship, as will be explained, is reciprocal in that, while the character of the demand for, and the anticipated selling price of, an article influence the nature and extent of its production, the sum of the various costs that are entailed in making and selling the article has naturally a considerable bearing on the price.

But the principles of value can be shown to apply as well, though not always so directly or with the same force, to the rewards of the different producers. Up to a point it can be maintained that the apportionment or distribution of the social product takes place in accordance with the values placed on the services of the respective agents; that wages, profits, interest, and rent are themselves subject to the same underlying and general forces. The connection, it will be shown, is not always distinct or fully worked out, particularly as public regulation and other "frictional" conditions exercise a considerable influence on the final distribution of income. But, even if the principles cannot be applied without qualification, that is no reason for ignoring the relationship that undoubtedly exists. Similarly, in considering proposals for the redistribution of incomes, which would have the effect of altering the net values placed upon the services of the several agents, attention must be given to the possible reactions of these changed values on the continued supply of the services. In short, the systems of production and distribution are physically interdependent, and it is the function of value, under perfect conditions, and in terms perhaps still to be discovered, to co-ordinate the two and bring about a proper balance.

SECTION 2

THE MEANS OF PRODUCTION

IN the early days of economic development production was simple and direct, the two primary factors being labour and land. But as development proceeded, a third factor, known as capital, emerged, and later still economists came to include yet another factor—organization or enterprise—as a distinctive agent.

LABOUR AND LAND

THE modern economic machine is so complex that it is not an easy matter to distinguish and classify the many parts of which it is composed. For purposes of study, however, we may accept the conventional division of economic science into the departments of production, valuation, and distribution, though as we proceed in our investigation it will become increasingly evident that the division is somewhat arbitrary, and that all sections of economic inquiry merge so imperceptibly into one another as to make a rigid boundary line quite impossible, even if it were desirable. The production of wealth is necessarily influenced by the method of valuation and also by the manner in which the wealth of the community is distributed among its members. Both the quantity and the nature of the goods produced are determined largely by the respective proportions of the total income going to the different sections of the people; while, on the other hand, the character of the distribution, it need hardly be said, is equally affected by the mode of production and exchange.

In the early days of economic development production was simple and direct. It was simple in the sense that the methods were elementary and that all the necessary materials could be obtained, as a rule, on the spot. It was direct in the sense that men produced for their own personal needs, that specialization was little known, and that exchange was in consequence seldom called for. Under such conditions only two "factors of production" were found necessary, namely, labour and land. Labour, in economics, comprises all human effort directed to the creation of utilities, but excludes effort spent for its own sake. Thus, the making of a cricket bat would be described as labour, and so would the services of a professional cricketer who makes use of the bat. But the activity of a man who employs it purely for pleasure would not be designated as labour (though it might be no less arduous), for it gives rise to no economic consideration.

The second original factor of production, which is customarily described as land, also calls for some comment, though proper consideration is reserved for a later stage. The economist gives the word a much wider interpretation than is found in common use. It is taken to include, not only ordinary agricultural and urban land, but in addition all the resources of nature that are used in the production of wealth. Mineral ores and other deposits, springs and waterfalls, tidal and general climatic forces—these and similar natural supplies are all comprised in the definition of land.

CAPITAL

Labour and land have always been, and still are, the primary factors of production. But economic development had not proceeded far before the need of a third agent became recognized. Man's requirements had grown more ambitious, and his simple methods of production were no longer sufficient. At a very early stage in his history he recognized the folly of killing all his livestock, leaving none for purposes of breeding. He realized that, by setting apart some of his crop to serve as seed for the following year, he obtained more abundant harvests. He found that, by the use of tools and other implements, his capacity for production was considerably increased. Thus there emerged the factor of production to which later was given the name of capital.

In ordinary language capital is taken to be more or less identical with money, but in economic terms its significance is much wider. It is true that capital may take the form of money; a stockbroker's capital, for instance, is for the most part in this liquid form. But, strictly speaking, any wealth that is segregated for the purpose of assisting in further production would be covered by the term. Thus, capital, while more comprehensive than money, is more restricted in scope than ordinary wealth. Only that portion of wealth that is devoted to further production can properly be regarded as capital.

This is the "social" view of capital. There is, however, an "individual" view, which is obtained from a rather different standpoint. The first interpretation emphasizes the productive function of capital, resulting in gain to the whole community. The second stresses the fact that capital yields an income to the owner, irrespective of whether the wealth is being employed productively or otherwise. For example, wealth that is lent to a spendthrift may yield a revenue, but not because of productive utilization. The interest may be paid out of current income or from the money itself, and not from any product directly attributable to the borrowed wealth. Such an investment may be very remunerative to the lender and, from his own point of view, he may reasonably regard it as his capital; but the benefit to the community of such an investment is virtually *nil.* It is preferable, on the whole, to employ the term in its "productive" or "natural" (as distinct from "acquired") sense as an agent of production. As such it yields an income which represents a net addition to the community's wealth, and not, as in the case of some "individual" capital, an income which is balanced by a debit elsewhere.

Capital and Savings

It is obvious that the supply of capital depends in the first place on the physical capacity to turn out wealth in excess of the immediate requirements of the time. This should not be taken to imply, however, that anything over and above the bare necessaries of life is to be regarded as potential capital, for the average person prefers more than a modicum of comfort and even luxury before he begins to think of saving. It is, in fact, the demand for articles of a non-necessary kind that is responsible for a large part of the demand for capital. If people were content to live at the subsistence level, and yet (assuming it were possible) were able to maintain production at its present level, the supply of capital would be so much in excess of the demand that there would be little inducement to save it.

Saving, as it appears to the individual, is not necessarily the same thing as judged from the point of view of the nation. When a person abstains from spending the whole of his income, and deposits part of it with a bank, insurance company, or other agency, the money, as is well known, is ordinarily transferred to manufacturers and others, who use it in developing and extending their own activities. In other words, saving usually involves the transference of wealth from one set of people within the community to another. There is abstinence from consumption mainly so far as concerns articles of everyday use, more particularly commodities of the comfort and luxury type. The demand for consumption goods is less than it might be, while the demand for production goods increases. In terms of quantity, the volume of consumption throughout the community as a whole may, for the time being, be no less than before; only its character undergoes a change.

A man's ability to save depends on his income and his obligations. The larger his revenue and the fewer his commitments, the greater is his capacity for setting apart some of his wealth. The fact, however, that a man's income is sufficient to enable him to save does not prove that he will save. The opportunity is there, but the incentive may be absent. There must be not only the power, but also the will, to save. The inducements to saving are numerous, but chief among them are the stimuli afforded by family affection and by the desire to provide for old age. These motives are responsible, doubtless, for a large share of the people's savings. Another motive, as already implied, is the desire of the saver to increase his efficiency in production. While it is true that a great deal of capital is directly employed by producers who have themselves saved it out of income, either in an individual or in a corporate capacity, the tendency in modern production is to depend largely on other people, who, after supplying the capital, are content to play only a passive part.

Another factor that influences saving is the state of security in general and the degree of risk of the investment in particular. In a community where law and order are not of a high standard, the will to save is not as great as in a country where property is more secure and where contracts are more fully observed. In early times saving (as distinct from hoarding, which results in no net addition to wealth) was comparatively small, partly because the needs of production were elementary, partly because the opportunity and the means of investment were undeveloped, and partly because life and property were not so well guarded as they are now.

Organization and Enterprise

So far we have considered the three factors of production—labour, land, and capital. Whereas labour and land are primary factors, present at the beginning of all economic activity, capital is a secondary factor, itself the product of the other two. Labour and capital are capable of almost indefinite increase; land, on the other hand, is rigidly limited in quantity. There is a certain resemblance, however, between capital and land, often so close as to make them almost inseparable. To begin with, they are both passive in their nature; they are both subject to the guiding force of labour. Further, land may be so improved by the application of capital that the product is more attributable to the acquired than to the original qualities of the land.

The total productivity of labour, land, and capital, acting in conjunction, may be increased by a proper co-ordination and direction of these factors. A slight alteration, for example, in the relative proportions may result in a considerable addition to the output. So important is organization in the modern industrial world that some economists have come to regard it as a fourth factor of production, ranking in significance alongside the other three. It is still an open question, however, whether organization should be regarded as a separate agent, or whether it should be included under labour. In so far as organization consists of the deliberate policy and action of individuals, it is simply a higher form of labour. There is no fundamental difference, in this respect, between the services of the railway manager and those of the engine driver. They vary in their character and in their reward, but they are alike in being individually and consciously provided.

A distinction of a more useful kind can be drawn between the salaried manager and the business undertaker or entrepreneur. The functions of the manager are more or less prescribed, and, though he may enjoy a large share of responsibility, his scope is somewhat limited. The entrepreneur on the other hand takes the initiative in promoting new ventures. He acts as a link between the agencies of production and those of consumption. His work is to link up supply with demand. He foresees a market for a particular class of commodity and sets the machinery of production in motion to meet the demand. Perhaps he adopts the reverse process and, by a scheme of advertisement and other methods, actually creates a demand for a new type of product.

In all such ventures there is a certain amount of risk, and it is the undertaking of these risks that is said to distinguish the entrepreneur from other classes engaged in production. The definition, however, is a little blurred, for, whereas an individual business leader may foresee new markets and take the initiative in providing for them, the actual risks may be thrown partly or wholly upon other shoulders. As a guarantee of good faith the industrial leader may be required to invest some capital in the business. But the whole of the necessary funds may be subscribed by capitalists, in the form either of finance houses or of shareholders. They participate in the risks, and hence in their profits they expect something more than the slender return from a gilt-edged investment.

Thus enterprise, as commonly understood, includes two functions—that of initiative and that of risk-taking. The former is essentially individual, whereas the latter can be distributed over a large number of people. In the modern joint-stock system, with its developed system of shares graded according to the degree of risk, the entrepreneur who renders the whole of the services usually associated with the term is very difficult to distinguish. More often than not, nowadays, the functions have ceased to be concentrated in one person. There has been a division of labour among business pioneers and risk-takers comparable to the specialization in other departments of the industrial system.

SECTION 3

POPULATION AND FOOD SUPPLIES

There is a tendency for population to increase at a faster rate than food supplies; but this tendency is largely counteracted, first, by the limitation of population increase, and, second, by the discovery of new resources and processes.

The Problem Stated

There are many at the present time who view with misgiving the increase in population, and the relative decline in the rate of food production. It is a fact that between 1881 and 1921 the population of Great Britain rose from 30 to 43 millions, whereas the home production of wheat did not increase at all. While the population increased by 43 per cent, the total numbers engaged in agriculture fell in these 40 years from upwards of 1,500,000 to 1,300,000, or, to state it in another way, the proportion of agriculturists per 10,000 of occupied persons fell from over 1,200 to less than 700. The significance of this reduction is emphasized when we observe that the numbers engaged in coal mining rose from less than 500,000 to 1,300,000, and in the metal, engineering, and conveyance trades from about 900,000 to nearly 2,500,000. The position in other countries appears to hold out but little comfort. It has been calculated that for the feeding of every person about 2·5 acres of land are required, and that, as there is a net annual increase of 5 millions in the white population, the cultivation of about 12½ million additional acres would seem necessary every year. It has been further estimated that if the whole population of the world were taken into account, about 40 million acres would represent the necessary annual addition to the area under cultivation.

In view of such figures it is not surprising that some people should be alarmed at the relative decline in our food production, especially when it is borne in mind that certain foreign countries from which we have been accustomed to receive foodstuffs are gradually increasing their home population and developing their own manufactures, with the result that they are exporting a diminishing quantity of food and raw materials to this country in exchange for our manufactured goods.

The Malthusian Theory

The problem is by no means new. As far back as 1798 Thomas Malthus, in his *Essay on the Principle of Population,* formulated his well-known theory, though even he was not the first to adopt a pessimistic view. Malthus lived at a time when, under the influence of men like Rousseau in France and Godwin in England, many people were accepting the doctrine of instinctive goodness and natural liberty. Malthus's father was among those who believed that, if human restraints could be removed, mankind would necessarily improve, both socially and economically, as a result. Malthus disagreed with this optimistic prediction, and advanced the counter-argument that, even if such a Utopia could possibly be attained, the ideal conditions would be only temporary, for population would inevitably grow until, with the greater pressure on the necessaries of life, the standard enjoyed by the people would be seriously reduced. Malthus was influenced doubtless by the wretched conditions prevailing at the time. Disillusionment had followed the French Revolution, and the living conditions of the working classes were appalling. The population was increasing, and so apparently was the amount of misery. Malthus was as much concerned with stating the facts as he thought he saw them as with prophesying the increase of mankind and the possibility of satisfying human wants.

In the first edition of his work Malthus attempted to express his theory in mathematical terms, and this gave rise to a certain misunderstanding. "A perfectly happy and virtuous community will double every twenty-five years, but there can be no similar increase in their food. The best lands are taken up first, then the next best, then the inferior, and at last the worst; at each stage the amount of food produced is less than before. By nature, human food increases in a slow, arithmetical ratio; man himself increases in a quick, geometrical ratio, unless want and vice stop him." In an arithmetical ratio, of course, the number increases by the process of simple addition, whereas in a geometrical ratio it increases by multiplication. For example, if we choose 2 to be the factor, the arithmetical progression, commencing (say) with 4, would be 4, 6, 8, 10, etc., while the geometrical ratio would be 4, 8, 16, 32, etc. It is unfortunate that Malthus formulated his theory in this way, for it is easy to show that food supplies on the one hand are capable of a much faster increase than that represented by the arithmetical ratio, while population on the other hand rarely increases in a prolific geometrical ratio. Malthus himself recognized his error, and in the second edition of his work (1803) the emphasis on the mathematical expression of his theory was not so pronounced. His main thesis, however, that population tends to increase at a quicker rate than food supplies, was reaffirmed, and as a statement of general tendency it allowed less opportunity for criticism.

In the first edition Malthus laid stress on the checks imposed by "vice" and "misery." In the later issue he made an important qualification by admitting the further check of "self-restraint, moral or prudential." The checks to population could now be classified either as "positive" or "preventive." The former operated through famine, disease and war, entailing a high death rate. The latter operated through restraint, entailing a low birth rate.

While population, if unchecked, is capable of indefinite increase, the quantity of cultivable land and natural supplies is by no means inexhaustible. At first the richest and most accessible areas are tilled, but, with the growing pressure of population, the less fertile and more distant plots are brought into cultivation. The effort expended on these plots is as great as before, but the returns per unit of outlay are less. The question may naturally be asked, "Why are not the best lands cultivated more intensively instead of making resort to inferior lands?" The explanation is that increasing the effort applied to a given area of land will not necessarily yield a correspondingly larger output; applying ten times the effort will rarely yield a crop ten times as large. A point is reached in the cultivation of land when successive equal units of outlay result in a less than proportionate return. Indeed, if land were not subject to such conditions, there would be relatively little need to cultivate inferior tracts, provided that the best land was easily accessible. It is because even the most fertile land yields after a point a diminishing return, on which more will be said at a later stage, that the cultivation of the inferior land becomes profitable.

The problem of population thus offers a two-fold method of approach. In the first place, man may attempt to limit the rate of increase of population, in the belief that a low birth rate involves less suffering than a high death rate. In the second place, he may use his ingenuity in devising means whereby our food production is increased at a greater rate than the pessimists of a century ago thought possible.

THE BIRTH RATE AND THE STANDARD OF LIVING

It is a well-known biological fact that reproduction of species and care for offspring vary in an inverse ratio. "If all the progeny of one oyster survived and multiplied, its great-great-grand-offspring would number 66 with 33 noughts after it, and the heap of shells would be eight times the size of our earth." As one glances along the evolution of living beings towards man, one observes that fertility declines as the concern for offspring increases. Primitive man had a high birth rate, but the death rate, on account of pestilence and inter-tribal slaughter, must have been enormous. In civilized communities both the birth rate and the death rate show a marked decline. Those who are alarmed by the falling birth rate and speak hastily of "race suicide" forget apparently that, with the improvements in medical science and social hygiene, the death rate is reduced in a similar proportion. What really counts is the margin between the two rates, or, as it is termed, the survival rate. The annual birth rate in this country has fallen from over 35 per thousand in the 'seventies to less than 19 in the last year or two. But the annual death rate has declined in the same period from over 21 per thousand to about 12. It is instructive to compare the survival rate in this country with that in a country where the birth rate is very high. India, for example, has a birth rate nearly double that in Great Britain, but her death rate is more than double; the survival rate in Great Britain, therefore, is higher than that in India.

The decline in the birth rate in civilized countries is attributable mainly to later marriages and the practice of birth control. Behind these factors is the desire of the people to maintain their accustomed mode of living and to ensure that their children will enjoy at least as high a standard. It does not follow, however, that if the population has become stationary, it points to a high standard of living. In some countries, China for instance, intensive cultivation of the land is carried to such a point that the majority of the large population have to live on the bare necessaries of existence. Any serious increase of population is prevented, not by the desire to retain the existing standard, but because the existing standard, being practically at subsistence level, can hardly be lower. A high birth rate in such conditions is almost inevitably accompanied by a high death rate.

Yet it is common knowledge that, where people are living almost at starvation level, the birth rate tends to be high. Prudence and restraint become more evident as the standard of living improves, in spite of the gloomy prophecy of the early nineteenth-century economists that an increase in the material comforts of life must necessarily result in an increase in the growth of population. Just as the birth rate varies between countries, so does it vary between different districts in a country, and between different social classes. Agricultural areas have usually a higher birth rate than is found in the towns. Unskilled workers have, on the average, larger families than skilled artisans, who, in turn, usually support more children than do professional workers and other people enjoying larger incomes.

One reason, doubtless, for the contraction of the birth rate as one proceeds from one social class to another is to be found in the age at which the workers in the respective groups reach their highest earning capacity. Agricultural and other labourers usually reach this point in their early twenties; mechanics and other artisans do not attain their maximum earning power for several more years; while those belonging to the business and professional classes have to wait still longer. The age at which the highest earnings are obtained naturally has some influence upon the marrying age, and consequently upon the size of the family.

DEVELOPMENT OF RESOURCES

We may now turn to the second method of approach to the population problem, namely, the invention of means whereby the world's food supplies can be increased at a rate sufficient to keep up with the growing population.

The growth of population during the nineteenth century was abnormal. New countries were rapidly opened up, while the population in these areas naturally increased at more than the average rate. The industrial revolution that took place in many of the old countries added to the national and individual prosperity and thus contributed also to the growth of the population. The purchasing power of the average British wage-earner's income increased by over 50 per cent in the second half of the nineteenth century, and, though his expenditure on the minor comforts and luxuries hitherto denied to him showed the greatest relative increase, his consumption of foodstuffs, too, showed a marked advance over his former standards.

Food supplies, however, did not fail to keep up with the demand. One reason was the development of new lands, made possible by improved means of transport, the future importance of which Malthus could not be expected to realize. The invention of the locomotive and the steamship enabled people to tap the most distant resources of the earth. While the white population increased between 1801 and 1901 by about 270 millions, the area under cultivation was extended by about 500 million acres. The discovery of the refrigerating process made it possible for foods, quickly perishable in the ordinary way, to be conveyed in good condition from one end of the world to the other. Not only new wheat and pasture lands, but also new foods were discovered. Sago and tapioca, for example, were generally unknown to the white races until the cry for new resources became insistent.

Together with these developments came important improvements in the methods of cultivation. The land was worked more intensively, but, by the application of scientific methods, was made to yield, up to a point, an increasing return. In the days of open-field cultivation, the average crop of wheat in this country was about 10 bushels per acre. Following the period of enclosures at the end of the eighteenth century and the employment of a scientific rotation of crops, the yield per acre was doubled. By 1870, as a result of artificial manures and other improved methods, the crop was increased to 30 bushels per acre. There is reason for believing that, with new advances in agricultural science and in the organization of the industry, the improvement in the yield from the available supplies of land will be well maintained.

If population continued to grow at the same rate as it has done during the last hundred years, it is doubtful whether even the fullest development of the new countries and the employment of the most scientific methods of cultivation would prove sufficient for the world's needs. But the evidence points in the other direction to a gradual contraction in the rate of population increase. Enlightened communities are coming to realize that quality of population counts for more in the end than mere numbers, and are not discouraged by a slowing-up in the quantitative increase if the physique and mentality of the people show a more than proportionate advance.

SECTION 4

LABOUR AND INDUSTRIAL EFFICIENCY

THE efficiency of labour depends not only on the personal abilities of the worker but also on his remuneration and working hours, on the conditions of employment, and on the quality of the industrial organization.

THE PERSONAL FACTOR

IN the foregoing section we showed that the limitations of natural supplies imposed some restrictions on the growth of population and influenced to some extent the average standard of life. In face of this natural tendency to diminishing returns man has constantly to exercise his mind to discover new resources and processes in order that the existing standard shall be further advanced. Invention in its various forms, we saw, is one means of combating the "niggardliness of nature," and of substituting increasing for diminishing returns. But, coupled with innovations in industrial technique, there has been on the whole a distinct advance in the efficiency, as measured in product, of the labourer himself.

The efficiency of labour depends on two main sets of conditions. First, there are the innate and acquired attributes that in a purely personal way influence a man's productivity. Secondly, there are the industrial conditions which are external to the worker himself, but which play a no less important part in determining his output. The personal and external factors, however, are so interdependent that it is not always possible to demarcate between them or to distinguish sharply between cause and effect.

The stock from which a man is derived has a considerable bearing on his efficiency. Even in this machine age race and breeding count for a good deal. The Lancashire cotton operative and the Bombay native may work on similar looms, but the output of the white man is appreciably greater. In the United States where the workers come from a variety of races the superiority of certain types is very marked, and in certain of the well organized factories the racial characteristics are taken into account in planning the allocation of different tasks.

The dependence of efficiency on personal health and strength needs no proof. Now that town life has largely supplanted village life, that the factory has taken the place of the home workshop, and that the speed and intensity of production have been considerably increased, it is essential that the new diseases that are liable to accompany these developments should be guarded against and the waste due to sickness be reduced to a minimum.

Education of the citizen has now come to be recognized not as a social luxury but as an economic necessity. It is not a mere coincidence that those countries with the best educational systems are those which are industrially and commercially the best developed. In former days the method of apprenticeship served the double purpose of preparing a youth for the struggle of life and of teaching him a trade. But apprenticeship in modern times, with all its advantages, does not perform the same service. Even in those industries where it is still practised the lack of personal contact between worker and employer prevents the youth's training from being as complete as it used to be, and points to the need for a well-organized system of vocational training throughout all stages of industry.

WAGES, HOURS AND EFFICIENCY

A close relation exists between a man's earnings and his efficiency. Wages help to determine, as much as they are determined by, the degree of one's productivity. If the wages are too small to procure a proper amount of food, clothing and shelter, the quality of the worker is almost bound to suffer. Experience of minimum wage legislation in sweated trades has proved abundantly that the higher wages have, in a sense, paid for themselves through a better standard of living, a better physique, and a better output. To the physical must be added the psychological factor. The knowledge that a meagre wage will be received at the end of the week is not conducive to serious application, but the expectation of a reasonable reward may of itself provide a stimulus to production.

The relationship between industrial efficiency and the length of the working day is even more pronounced. It is a well established fact that there is in every occupation a certain working period during which the maximum productivity is obtained. A tired worker is not a good producer, and in the last hour of a long day may not be worth employing at all. The Industrial Fatigue Research Board has made numerous inquiries into the relation between hours and output and has published instructive reports which go to prove the economy of limited working hours. Naturally the conditions vary according to the character of the industry, and the arduousness and the intensity of the tasks. The optimum point in the coal mining industry, for example, is at a different level from that in clerical occupations. But investigations have shown that, even in so-called "light" employment, the hours of work are often in excess of the amount really necessary to evoke the utmost efficiency.

In certain industries, however, the daily period of employment has been so reduced that, while the output per hour has been increased, the output per day has declined. The Industrial Fatigue Research Board examined the effects of hours reductions in the iron and steel, tin-plate, and glass industries. It reported that "within the limits observed, the results are consistent in showing that a reduction in length of shift is generally followed by an increase in *hourly* output, but that this increase is usually insufficient to compensate for the shorter hours, so that the total individual output and the total output *per shift* is less on the shorter than on the longer hours. In continuous processes, however, there is generally an increase in total output *during the twenty-four hours.* It may take from two to thirteen months after the reduction of hours before the increasing output attains a steady level."

No less instructive were the findings of the Industrial Fatigue Research Board in regard to rest-pauses, which are but another way of reducing the time actually spent at work. "Investigation carried out by the Board indicate that in light manual repetition work the judicious introduction of a rest-pause of 10 to 15 minutes into a spell of 4½ to 5 hours will be eventually followed by a small but genuine increase in output of the order of 5 to 10 per cent, notwithstanding the shorter time actually worked. According to certain laboratory experiments, there are indications that in heavy muscular work also, efficiency might be greatly increased by periodic rest-pauses and frequent changes of posture."

Coming in the middle of working periods, rest-pauses do not, of course, increase the time of leisure in the evening, and are not perhaps on that account so acceptable to many workers as a direct reduction in the hours spent in the factory. But, as the rest-pauses rarely work out at more than twenty to thirty minutes a day, such benefit as is likely to accrue to the volume of production is more likely to be experienced if the reduction takes the form of a break in the middle of a spell of work instead of the equivalent period at the end of the working day.

The cutting-down of the maximum working day, like the raising of the minimum wage, may have the effect of the wet-bulb temperature reached 72-73 degrees F. and this effect can only be due to an involuntary reduction in the working capacity of the operatives."

No less important, however, than all these purely physical conditions of employment in affecting the worker's efficiency is the quality of the general organization. The enormously increased productivity of recent times is due, not so much to the improved powers of the worker himself, as to the growth of an intensive system of specialization and co-ordination which, as will be shown in the subsequent sections, manifests itself both inside the factory and throughout the different parts of the industrial system.

SECTION 5

THE DIVISION OF LABOUR

THE division of labour is fundamental to modern industrial organization. While on the one hand it involves an extreme specialization of functions, on the other it implies the co-operation and interdependence of all branches of economic activity.

FORMS OF SPECIALIZATION

THE outstanding feature of the modern economic system is the intense degree of specialization which is to be found in every department of industrial and commercial life. Contrary to common opinion, the division of labour is not characteristic only of organization inside factories and workshops. Specialization of a more fundamental kind is to be found in the splitting-up of a community into large occupational groupings, an arrangement so elementary and obvious that it is usually taken for granted. But specialization did not always exist even in this simple form. Primitive man was self-sufficing. He hunted for his own food, made his own garb and habitation, and engaged in no trading relations of any sort. In the family itself, it is true, some division of function would be practised, in that the women and younger members would be largely engaged on the lighter duties, while the men performed the more arduous tasks. Formal exchange, however, which we now associate with a developed system of specialization, was completely absent.

The first stage in the evolution of the division of labour was marked when people began to specialize in supplying different types of consumers' goods, though still performing all the tasks from beginning to end that were involved in their production. The second stage was reached when the trade was sub-divided into a number of processes, each of which now required the full time and attention of specialized groups of workers. For example, the production of clothing, at first regarded as a single trade, came to be divided into the obtaining of the raw materials, the making into cloth, and the fashioning into garments, each process employing a separate group of workers, who rarely, even if they had the ability, were called upon to engage in any task other than that which they had made their own. From the second to the third stage was but a short step. The processes themselves became further divided, until producers found themselves exclusively employed on one part of a process. Cloth-making was subdivided into milling, spinning, weaving, dyeing, etc., while even in these branches further specialization was found practicable. Eventually we reached the intensive division of labour practised at the present time, the characteristics of which are too well known to need lengthy comment.

In the course of this economic evolution we perceive a further division of function between making and selling. Originally, as we have pointed out, there was no commerce at all, and when exchange first arose it was carried out between the actual maker and the consumer. Several examples of this simple organization are still to be found, but in the majority of trades the mutual advantage of specialization among makers and sellers has come to be recognized. From this specialization has emerged the middleman, who, though comparatively a newcomer to economic organization, has gained a position of great importance and power.

Still another form of division of labour is the specialization of districts and countries, largely a result of natural and other local advantages. The localization of industry is a prominent feature of modern organization. Though it presents some special problems, which we shall examine later, the underlying principles are no different from those governing specialization in general.

THE BENEFITS OF SPECIALIZATION

From the time of Adam Smith economists have extolled the advantages of the division of labour. To anyone with the slightest knowledge of industrial conditions, the benefits are almost axiomatic, and we shall therefore be content with a brief enumeration of the gains that accrue to the employer and worker in particular and to the community as a whole.

It is evident at the outset that, without a division among entire groups and callings, it would be impossible for people to choose from and enjoy the nearly infinite variety of commodities that are now offered for sale. It is not merely a matter of possessing the means to purchase these goods. A Croesus of ancient times had not the choice of the wide range of articles that is at the command of the ordinary wage-earner of to-day. When wants were simple it was practicable for a family to be entirely self-supporting, but, as requirements became more numerous and complex, some division of function became indispensable. Not only did it provide the people with a greater volume and variety of goods, but it was also the means whereby an increase in population could take place without the fear of a reduced standard of living.

There is a natural tendency for people to specialize in those pursuits for which they have a personal aptitude, and the tendency is greatly strengthened when the natural ability is supplemented by a suitable training. The more it is possible for each man to be allocated to a task for which he is best fitted, the greater is the total volume of production and the less is the waste. In the days before specialization every man, irrespective of his capacities, was expected to perform a wide range of tasks, only a few of which, unless he was exceptional, could he carry out with any measure of success. Owing to differences in physique, mentality, age, or other factors, a worker might be well qualified for one type of task but utterly unsuited for another. A proper division of labour thus serves to improve the quality as well as the quantity of the work turned out.

Once a person has begun to specialize in the performance of a single group of operations, he usually acquires through constant repetition a certain proficiency which helps to increase his output still further. This acquired dexterity eliminates unnecessary movements and effects an economy of time, which is of advantage to the employer as well as to the workman. Time is saved, too, in learning the trade. Instead of spending years in preparing for all branches of a trade, a period of months, or even of weeks, may be all that is necessary to secure the necessary ability to engage in a single specialized employment.

The division of labour in a factory facilitates the use of machinery, which, though it may cause some dislocation on its introduction, tends ultimately to be generally beneficial. It relieves the worker of a certain amount of physical strain, and, by increasing the total amount of product, permits perhaps of a rise in his wage. The advantages of machinery to the employer are too obvious to need detailing. A further saving is obtained through allocating the skilled and responsible workmen to the manipulation of delicate machinery that requires careful handling, and the less skilled operatives to the tending of the semi-automatic machinery which is not so likely to break down and cause serious loss if not properly used.

The division to which we have already referred between the making and marketing of goods may considerably lengthen the period of production. Months may elapse between entering on the first stages and disposing of the final products. On the other hand, there are numerous instances in which the time taken between the initiation and completion of production is appreciably shortened. In the same way as a judicious division of labour in a factory effects a saving of time by making it unnecessary for a workman to move from one task or part of the workshop to another, so an efficient specialization between maker and seller relieves the former of a good deal of trouble and time that he would otherwise have to spend in travelling and interviewing, and enables the latter to devote his full time to that branch of business for which he is best qualified.

The periodical Census of Production returns reveal that industries which produce consumers' goods are in a distinct minority. The products of one trade are more often than not utilized by another as material for further production. The nuts and bolts and similar goods that are turned out as the main products of one group of trades are evidently of little direct service in themselves, and are intended from the start to become embodied in some larger article, such as a machine or a bridge. As a main industry develops, it becomes surrounded by ancillary trades, to which in turn still other trades become subordinate. It does not follow, however, that the subsidiary trade is of small extent or of local importance only. The manufacture of textile machinery in Lancashire, though secondary to the textile industry proper, is of considerable dimensions, and such machinery is sent to many parts of the world.

To sum up, the division of labour is both intensive and extensive in its effects. On the one hand, it narrows down the functions that are allocated to individual producers. On the other hand, it widens the field of economic activity and brings about a close interdependence of interests which, on first examination, might appear to have little in common.

Two conditions of these developments have to be noted. In the first place, the lengthening of the chain of production necessitates a corresponding increase in the outlay of capital, the owner of which thus acquires a greater importance than he possessed in the days when wants were few and methods of production were simple. Secondly, the increasing subdivision calls for effective co-ordination, without which there is danger of chaos and waste. Opportunity is offered, therefore, not only to the capitalist, in the strict sense of the word, but also to the industrial organizer. In a particular firm the management assumes responsibility for an efficient specialization of the workers in its own employment. Over and above this form of organization is the direction given by the "captain of industry" to trades as a whole. The more advanced is the specialization of functions, the greater is the need of efficient industrial leadership.

SECTION 6

THE LOCALIZATION OF INDUSTRY

The causes of localization are cumulative, and an industry may continue in a particular district long after the original factors have disappeared. The principle of relative advantage or comparative costs governs, not only the localization of industry, but also the division of labour in all its forms. Localization is not without its drawbacks, and already there are counter-forces at work tending to some degree of decentralization.

Primary Causes of Localization

The localization of industry is simply a territorial division of labour. Just as a large group of people specialize in a certain branch of industry, and individuals within the group concentrate on particular operations, so we find entire districts, and smaller territories within those districts, devoting themselves to specialized industrial processes. A whole country engages for the most part in manufacturing rather than in producing raw materials. Different areas concern themselves mainly with engineering and textiles. The engineering districts are divided according to the "heavy" and "light" sections of the trade. The textile district is broken up into the wool and cotton areas, which are further subdivided into localities that are principally engaged in separate branches of the industry. North and East Lancashire concentrate mainly on weaving, South Lancashire on spinning. Bolton and Manchester engage largely in "fine" spinning, Oldham and Rochdale in "coarse" spinning. Similarly, in the weaving districts, Preston specializes in shirtings and fancy cloths, and Nelson in sateens and brocades.

What causes have led to this geographical division of labour? The most obvious factor is the existence of natural resources. An engineering industry, for example, is likely to become established near iron and coal supplies, even if the market for the products is some distance away, for it is cheaper to transport the finished goods than the fuel and raw materials. Thus the metal industries in this country established themselves around the coal-fields, the pottery industry in North Staffordshire developed originally from local supplies of clay, while the Wycombe chairmaking industry relied to a great extent on the neighbouring beech forests.

In some instances the localization resulted from political and arbitrary decisions. The settlements of Flemish and other artisans under the protection of Plantagenet and Tudor monarchs were not always determined by the presence of local materials. According to Fuller, the Flemings began the production of cloths and fustians in Norwich, of serges in Colchester and Taunton, of kerseys in Devonshire, and of Levant cottons in Lancashire. In more modern times firms have more or less arbitrarily selected a centre in which to commence operations, and a whole industry has eventually grown around it. The local natural advantages, if any, may be quite secondary to the facilities offered by the developed economic organization of the area.

SECONDARY CAUSES OF LOCALIZATION

Whatever the original cause of localization, whether natural or arbitrary, once it has begun it tends to become more firmly rooted and to expand, provided, of course, that the external conditions remain favourable. Where, for instance, there is a change in the distribution of population or in the character of the market, the location of the industry is liable to alter. Thus, centres in the eastern counties had to yield to the newer towns of the Midlands and North. Apart from such changes, however, localization gains force as time goes on. In the first place, special transport arrangements, such as a network of railway lines or a ship canal, may be provided; while banking, insurance and various technical institutions may arise in the area, all tending to establish the industry more strongly than before.

Secondly, a certain economy in capital may result from localization. Highly specialized firms can invest in expensive machinery only so long as it is continuously employed. If the industry is confined to a single district, the aggregate local demand for a specialized product, itself to be used in further production, may be sufficient to warrant the heavy initial outlay.

This leads to the third factor, which is both an effect of initial localization and a cause of still further concentration, namely, the rise of subsidiary trades. Every main industry requires a vast number of implements and parts, many of which are capable of being produced more economically on the spot. Further, a local organization may gradually evolve for satisfying the personal needs of the people engaged in the industry. Houses, stores, restaurants, places of entertainment—all spring up in an industrial area, helping to strengthen the original tendency to concentration.

Fourthly, there gradually develops a local market for highly skilled labour. Where factories of a similar kind are clustered together in a district, the opportunities of securing specialized craftsmen are greater than where the industry is scattered. Also, the workers may be able to obtain employment without leaving the locality. Once a man has a settled home, he is usually reluctant to take up employment in another part of the country. The localization, therefore, is advantageous in this respect both to employers and to workmen.

Lastly, there is the factor of inertia. It may happen that the original causes responsible for the geographical concentration have long since disappeared, yet the industry still continues to flourish in the district. The textile industry in the West Riding nowadays depends far more on imported than on local wool supplies, and, almost without exception, uses for motive-power electricity and steam instead of running water, which was such an asset in the early days of the industry. The potteries in Staffordshire are but another example of an industry which carries on despite the fact that practically all the raw material has now to be brought from elsewhere. The acquired facilities of a district, the reputation attaching to its products, the expense and risks of commencing operations in a new, untried region, together with the natural disinclination to change, may between them be sufficient to defeat any tendency to transfer the industry to another locality.

THE PRINCIPLE OF RELATIVE ADVANTAGE OR COMPARATIVE COSTS

The benefits of localization are naturally bound up with those accruing to the division of labour in general, and need not be recounted afresh. A distinct economy in labour costs results from the effective specialization among the workers in a district, each of whom is more likely to find employment suited to his particular abilities. The constant application to special tasks develops a local skill which is so pronounced that some have described it as hereditary. The economy in material and fuel is hardly less important, especially where local supplies are still available. A commodity may go through the several stages of its production with hardly any break of continuity, thus effecting a valuable saving of time. In addition, there is the obvious reduction of transport expenditure between the various firms engaged at the different stages of production, which serves to cut down the total costs of production and improve the efficiency of the whole industry.

Underlying the advantages is the principle known to economists as the law of comparative costs, which is no less applicable to international than it is to inter-local trade. It is self-evident that a district will tend to specialize in those commodities in the production of which it has an *absolute* advantage. If a country has a monopoly of a particular article, or if her resources adapt her pre-eminently for its production, the reasons for localization need no demonstration. The doctrine of comparative costs, however, stresses the *relative*, as distinct from the absolute, advantage. A district may be able to produce commodity A quite as efficiently as another district. But if the former is even better adapted for producing commodity B, it may be in the mutual interests of the two areas for the first to specialize in the production of commodity B, and for the second to concentrate upon that of A, and then to exchange according to their requirements.

For example, Lancashire might be able to produce wool textiles as plentifully as Yorkshire. But that is no adequate reason why the former county should produce both cotton and wool fabrics. The deciding condition is her relative advantage in the manufacture of cotton as compared with wool. Her resources are not unlimited; she cannot engage in cotton and wool textiles without restriction. The test is, which commodity can Lancashire, with her available resources, produce to greater advantage? A given amount of capital and labour applied to cotton yields a net return of (say) 1,000 units of value. The same amount applied to wool results in (say) 800 units. If the people in Yorkshire are able, with the same outlay, to obtain 1,000 units of value from wool and 800 units from cotton, there is obviously a strong case for specialization of the two counties in the production of cotton and wool respectively. (For simplicity the costs of transport in the resulting exchange are being ignored, though it is possible in certain circumstances that, if the relative advantage is not very pronounced, it may be nullified by the costs of conveyance.)

Suppose, now, that the people in Yorkshire could obtain, for an equal outlay of capital and labour, a return of only 800 units of value from wool and 700 units from cotton. It might be thought on first examination that Lancashire, since she could manufacture wool as efficiently as Yorkshire, would now produce both cotton and wool fabrics. But a moment's thought will show that it would not be in her best interests to engage in both branches of textile production. Her available supplies of capital and labour would give a greater return if devoted to the manufacture of cotton, for which she is better adapted. Despite the fact that she can manufacture wool no less economically than Yorkshire, it would be more profitable for Lancashire to concentrate upon the production of cotton, and buy her wool requirements from the neighbouring county.

Suppose, finally, that Lancashire still obtains a net return of 1,000 units of value from cotton and 800 from wool, but that Yorkshire is less equipped for either branch of production and obtains only 750 from wool, and 700 from cotton. Even under these conditions it would still be worth Lancashire's while to specialize in cotton. Though she could, if necessary, produce wool at less cost than Yorkshire, the disadvantage resulting from the less intensive application of her resources to the production of cotton goods would outweigh the gains on her wool manufacture. In other words, a district may have an advantage over another in the production of certain goods, yet find it in its own interests to buy those goods from the other district, and concentrate its own resources upon those goods in the production of which it has the greater relative advantage.

Comparison of individuals will serve better, perhaps, to illustrate and clarify the reasoning. A professional man requires his car to be kept in good condition. He can either look after it himself or entrust it to a garage employee. Possibly he could lubricate and wash the car with greater ability than could the man to whom the task is allotted. Yet the owner calculates that the time required by the car would be used to greater advantage if employed in his own professional duties. The mutual benefit resulting from this simple division of function is almost self-evident. The gains are essentially no different as between different districts or countries.

Drawbacks and Limitations of Localization

The undoubted gains of localization should not cause us to lose sight of the disadvantages that are liable to arise. One drawback is to be found in the dependence of a large number of people on the fortunes of a single industry. If the demand for the product declines or if supplies of materials are cut off, the families in the district are liable to extreme distress, for the depression is naturally heavier than it would be if the interests of the people were more widely spread. The ancillary trades, as well as those ministering directly to the people's needs, also share in the depression.

A second drawback is experienced where the labour required in a district is principally of one kind. If, for instance, the localized industry is such that adult male labour only is required, the wages of the men workers may be fairly high, yet, owing to the lack of employment for women and young workers, the average family earnings may be relatively low. The presence of supplementary trades, not directly dependent on the main industry, is thus found to be of advantage.

Where an entire nation specializes largely in the manufacture of goods, and relies on other countries to provide materials and foodstuffs and to furnish markets for her products, a third disadvantage may arise, if, owing to a war or some other reason, foreign trade breaks down. Britain has to import the greater part of her raw materials and food requirements, and, in the event of these supplies diminishing, or the shipping space being requisitioned for other purposes, considerable hardship both to individual industries and to the people as a whole is liable to result.

Fourthly, we may note the social ill-effects that localization may bring about. The concentration of large masses of people in small areas may, in the absence of adequate safeguards, be accompanied by overcrowding and the attendant evils. On the other hand, it should be observed that slums and unhealthy living and working conditions are not confined to the districts in which single industries are localized—nor, for that matter, need they be inevitable in any industrial area, as modern conditions of factory regulation, re-housing, and town-planning amply testify.

In recent years the tendency to further localization has been to some extent impeded, if not actually checked, by important counter-forces. Although, as we have shown, transport facilities may induce and strengthen some concentration at the outset, they also serve to some extent as a decentralizing agency. Firms may find it more economical, under a cheap transport system, to have parts made in one district and assembled in another. Railway companies are constantly inviting manufacturers to open factories "down the line," to put their plant where it has room to grow. Business owners may experience some difficulty and inconvenience in carrying on their production away from the large centres of population, but are apt to find full consolation in the saving in rental and rates.

Also, with the development of large electrical stations throughout the country, and the transmission of power at low rates over long distances, firms have not the same reason for settling around the coalfields as in former years. We are already witnessing the industrial revival of certain areas in central and southern England which, in the nineteenth century, were subordinated in importance to the iron and coal regions of the northern counties. The distribution of the population over the country as a whole is shown by the 1931 Census returns to have appreciably altered, and the shift of the population centres seems likely to continue.

SECTION 7

LARGE-SCALE PRODUCTION

THE size of a business is influenced by the nature and extent of the market and by the conditions of production. The large firm enjoys both technical and administrative advantages over the small firm, but, despite these economies, the small business still thrives in certain trades where individuality and the personal factor are of prime importance. There is a tendency, on the whole, for the unit cost of production to fall as the volume of output increases. Certain industries, however, are more subject to increasing than to diminishing costs.

FACTORS DETERMINING THE SIZE OF A BUSINESS

Two sets of forces have been at work during the last few decades, both tending to increase the size of a business, and it is necessary that a clear distinction should be drawn between them. In the first place there has been a marked increase in the size of the industrial and commercial establishment itself. The comparatively small workshop has been largely superseded by the large factory; the retail shop is struggling hard to maintain its position against the departmental stores. In the second place there has been a pronounced tendency for the control of a number of businesses to pass under single direction, though not necessarily accompanied by a change in the outward appearance of the constituent firms. For the present we are mainly concerned with the first type of industrial growth. We shall deal more particularly at a later stage with the subject of unified control.

It is not every business that is capable of being conducted on a large scale. Even though there may be no physical obstacle on the side of production to the supply of a great quantity of commodities, the demand may prove inadequate. Thus at the outset the size of a business is necessarily limited by that of the market. If the product is such that the demand, actual or potential, cannot be increased to any appreciable degree, there is no advantage in constructing an elaborate factory which, through lack of orders, is not going to be worked to its full capacity.

If, further, the article is not in regular demand all the year round, the manufacturer is not likely to adapt the size of his works to the maximum requirements that may last only a few months, unless the profits from the short period are more than sufficient to compensate for the standing charges that have to be borne throughout the slack months. A seasonal demand is partly responsible for the home work that still survives in certain industries, in which the manufacturers prefer to have a factory of sufficient size to provide for the normal demand, and in busy seasons give out a large share of the trade to domestic workers.

Where, however, it is possible to produce goods "for stock," and especially where there are foreign markets, the factories, notwithstanding a seasonal demand at home, may find themselves able to continue production throughout the year. Such conditions have helped to bring about a relative decline in home employment in the clothing and other industries, and to increase the size of the average factory. But, if the article is subject to the vagaries of quickly-changing fashion, and if substitutes are liable to be put into use at any time, there is little inducement to turn out goods much ahead of the demand. Similarly, if the commodity is of a perishable nature, there is an equally effective check upon the scale of the undertaking.

Besides the character of the market and of the commodity, we should consider also the factors governing the methods of production. Some articles lend themselves more to large-scale production than others. In some cases the methods can be standardized and all the operations reduced to a mechanical routine. In others, either through the desire for individuality in production or the peculiar conditions attaching to the business, there is less scope for "mass" methods. Also, some industries incline more than others to the use of machinery. The extent to which capital can be utilized is a factor of first importance in determining the size of the industrial unit.

TECHNICAL ECONOMIES OF THE LARGE FIRM

It is convenient to distinguish between the economies obtained from a skilled direction of the undertaking itself and those which arise from the general economic environment. The *internal* economies are due to a deliberate and conscious arrangement of the resources at one's disposal. The *external* economies are provided by institutions and facilities that have sprung up, not necessarily through the agency or for the benefit of any particular firm, to promote the efficiency of an entire industry or region. We noted several instances of this kind when dealing with industrial localization. Thus, the benefits obtained from a wise management of men and allocation of tasks should be placed in a different category from the gains that are due to the development of a transport, banking or educational system. The prosperity of many firms is attributable not only to the ability of their own managers and employees, but also to the external advantages which have helped on and provided opportunities for private initiative.

The internal economies, with which we are more immediately concerned, fall mainly into two groups—technical and administrative. For purposes of analysis it is helpful to consider the advantages due to improvements in the processes of manufacture in a separate category from those that arise from an efficient direction of the policy and activities of the business as a whole.

An obvious technical economy of a large firm is its ability to secure an intensive division of labour among its employees. The skilled men are not required to spend part of their time on inferior tasks, while the semi-skilled workers are not permitted to undertake a job that is beyond their abilities. In a small workshop, on the other hand, an uneconomical arrangement of tasks is quite common. There is frequently insufficient work suitable for the best qualified men, but in busy periods the less skilled may be called upon to perform a task to which they are quite unequal. The owner of a small business may have to devote much time and energy to clerical and routine work. Although he may regard it as a saving of money, the diversion of his special abilities to the lesser functions is a doubtful economy.

Secondly, the large firm enjoys a great advantage in the use of capital and power. It can install and employ continuously the most up-to-date machinery, while its consumption of fuel in terms of output is relatively small. A third advantage is in the utilization of waste products. All kinds of by-products are now obtained from materials and scraps that were formerly regarded as useless. A small firm does not usually have sufficient of this "waste" to justify a department for reclamation, and its unit costs of production tend therefore to be greater. Furthermore, it has not the same opportunity as the large firm for experiment and research, the benefits of which are too evident to need enumeration.

The large firm is able to exploit the advantages of standardization. The continuous production of uniform parts makes for economy to the manufacturer and convenience to the purchaser. As a result of specialization, combined with standardization, many commodities that were formerly bought only by the well-to-do are now within the reach of the masses. Standardization need not imply uniformity of the finished product. Up to a certain stage the method of production can be standardized, and after that point a diversity of final processes can result in a wide variety of finished goods. All the products may be turned out in a single establishment, commencing in one central department and then being distributed, in their incomplete state, to the respective sections to be moulded or stamped for one or other of the final purposes.

Administrative and General Economies

We may now pass to the internal economies of a large firm that are to be found in the commercial and administrative departments. A clear advantage of the large over the small business is in buying and selling. The firm that does a considerable trade can usually obtain better terms from the wholesaler. Often it deals directly with the manufacturers and obtains special discounts. This advantage, together with those we have already indicated, enables it to sell its goods at a lower price than a weaker competitor. The economy of cheap buying and selling is specially marked in the retail trade. The owners of multiple and departmental stores can afford to sell at a narrow margin of profit if their stocks are turned over very quickly. The advantages are thus cumulative. Low buying and production costs result in low selling prices; the resultant increased demand means a larger volume of business and still further economies.

A further advantage on the side of selling is in connection with advertising. The sums spent by large firms in this way are certainly considerable, but the cost per commodity sold may be extremely small. The gain is particularly noticeable after the initial heavy charge has been borne. The advertisement cost per unit diminishes, and the goods, once a start has been made, begin to advertise themselves. Similar considerations apply to expenditure on travellers and agents. For every thirty minutes spent in a shop, a representative may spend an hour in travelling. Even a large firm may find the outlay uneconomical if it produces only one class of article. But if it turns out a certain variety of goods the traveller can use his time to better advantage. For little extra effort he can obtain larger orders, while the cost of moving about shows a proportionate decline. This economy may prompt the amalgamation of firms engaged in producing the different goods that are sold in a retail shop. Though two firms may not have been in competition, they may find that a single traveller can sevre both their interests. The cost per representative may be slightly increased, but, with a reduction in the number of agents and in the expenses bill, there may be a distinct gain on balance.

A large firm, too, enjoys certain advantages in obtaining necessary supplies of capital and facilities for credit. Though mere size is not always a sure criterion of financial soundness, the average investor places a greater trust in the stability of large concerns, and the obtaining of fresh capital, where needed, is thereby rendered easier. Similarly, when bank credits are sought the large firm is, as a rule, in a better position. Its reputation and goodwill are usually greater, and the risks of loans not being repaid much less considerable. It is not so likely to go out of business on the approach of bad times as the small firm, whose powers of resistance are, of course, much weaker. The ability to cope with industrial fluctuations is thus an additional advantage of the large firm. Its reserves are greater, and during temporary depression it can afford to carry on business at a loss, so that, when prosperous times return, its markets will not have been lost.

LIMITS TO THE SIZE OF A BUSINESS

Despite, however, all the advantages of large-scale production there are still many industries in which the small firm is by no means a negligible factor. It may flourish either because the market conditions are specially favourable to small-scale enterprise or because there are certain disadvantages that are liable to neutralize the economies of the large firm.

Where, owing to the perishability of the goods or the expense of transport, production must take place comparatively near to the place of consumption, the economies of a large centralized establishment cannot be fully attained. Milk and dairy produce, for example, will continue to be supplied by small businesses, notwithstanding the rise of milk distributing combines and the growing use of tinned and preserved foodstuffs. Where, also, the market is very restricted or specialized, the production is not unlikely to remain for the most part in the hands of small firms. Again, where the articles are made specially to order, and where individuality is allowed to express itself in the selection and making of the goods, the production is almost necessarily on a limited scale. The bespoke tailor and milliner, for instance, have to meet increasing competition from the multiple shop and even from the mail-order business, but it is doubtful whether they will lose their position for many years to come. And, it should be unnecessary to add, such services as those of the surgeon, the dentist, the gardener, and the house decorator, will continue to be provided on the small personal basis.

In some ways the large firm is not as adaptable as the small competitor to variations in the size of the market and in the nature of the demand. Elaborate machinery is economical only so long as it is constantly in use, and this involves a certain uniformity of methods and output. Further, once the expensive plant has been laid down, the owner is naturally anxious to use it as long as possible without having to make drastic alterations and replacements. On the other hand, the small business can usually adjust itself to the changing character of the market with comparatively little expense and dislocation.

But the outstanding economy of the small firm lies in the owner's personal interest and control. An intimate knowledge of the details of a business and a close supervision of all the workings cannot be expected when the undertaking is on a gigantic scale. And when, as is common, the ownership of a large business is vested in hundreds or thousands of shareholders, the absence of the personal factor in control is still more evident. However efficient and conscientious a salaried manager may be, he is not so likely to take the same keen interest as the individual owner in the fortunes of the business.

Also, it may be noted, many of the economies that used to be in the exclusive possession of the large-scale business are now, as a result of an improved external organization of the industry, shared to some extent by the small firm. With the development of technical and research institutions, much valuable information regarding new methods and processes, hitherto confined to the wealthy firms that could afford the scientific investigations, is now distributed to all firms, irrespective of size, that care to take advantage of the discoveries. Subsidiary trades have sprung up which purchase the waste materials and scraps of the small firms for conversion into other products, thus reducing the advantage in this respect enjoyed by the large firm. Finally, with the establishment of central electrical supply stations, and the transmission of cheap motive power over considerable distances, a further advantage of the large firm is in a certain measure discounted. Relatively, the small concern is certainly declining in importance, but in point of actual number it holds a more important place in the present-day system than some economists of a generation ago predicted.

INCREASING AND DIMINISHING RETURNS

The extent of business operations, therefore, is largely influenced by considerations of costs in relation to output. Where costs show a reduction as the scale of production increases, there is a pronounced tendency for the size of the undertakng to increase, provided, of course, that the demand is sufficient to absorb the output. The application of successive " doses" of labour and capital results in a more than proportionate increase in the amount of the product. This tendency for the unit cost of production to fall as the volume of production expands is known in economics as the law of increasing returns or diminishing costs.

This law refers to the amount of the product rather than to the profits. The application of twice as many doses of capital and labour in the making of a certain kind of article may yield, perhaps, three times as much product as before. But if the market is so unfavourable that the total product cannot be disposed of except at a considerably lower price, the net proceeds may be less than those previously obtained from the smaller output. Thus, the attainment of increasing returns does not necessarily result in the making of larger profits. The limitations of demand often prevent the full utilization of all the benefits attendant upon large-scale production.

There are certain conditions, however, under which the unit cost of production, instead of falling with every increase in output, shows a tendency to rise. When the application of equal doses of capital and labour is followed by a less than proportionate return, the law of diminishing returns is said to be in operation. Agriculture and other extractive industries afford the best examples of diminishing returns, although, as will be shown later, the tendency is constantly expressing itself throughout all forms of production. In the growing of foodstuffs there is not the same opportunity for intensive methods and standardized operations as in the manufacture of ordinary commodities. Nature is described as "niggardly" for the reason that a greater effort applied to a given tract of land will not always yield a correspondingly greater output. If, for example, 100 hours devoted to a plot of land result in 500 lb. of vegetables, it is unlikely that 200 hours will yield 1,000 lb., so long as the method of production and other external conditions remain unaltered. Indeed, if the cultivation is carried far enough, it is likely that the application of further labour will result in no additional crop at all.

Diminishing returns as here defined are sometimes confused with the falling-off in the product due to the cultivation of inferior lands. In a new country, for example, it may be assumed for present purposes that the most fertile land is cultivated first, and then, as the population increases, the inferior lands are brought into use. It is true that the application of a given amount of capital and labour yields a smaller return than was obtained from the best quality land. But the position is somewhat different in that both grades of land are virginal; the disparity in the returns is due, not to the fact that one plot has already been deprived to some extent of its productive capacity, but to the fact that it is by nature less prolific.

People, therefore, tend to work the more fertile land until the returns have so diminished that it becomes profitable to cultivate the inferior land. In a "new" country, where land is plentiful and cheap, large holdings and extensive cultivation are the rule. When the demand for food increases, it is more economical to plough up some fresh land than to cultivate the first tracts more intensively. But in an "old" country, where land is dear and used for numerous purposes besides growing food, intensive methods are more usual. The holdings are much smaller, but the output per acre is usually greater.

Production rarely ceases at the point at which diminishing returns set in, for a profit may continue to be earned considerably beyond this stage. The determining factor is not the volume, but the price, of the product. Though the cost per unit begins to rise, the selling price may still show a sufficient profit to warrant the application of more capital and labour. As will be explained more fully at a later stage, the producer tends to continue his expenditure until it is just covered by the selling price of the product.

INTERACTION OF DIMINISHING AND INCREASING RETURNS

The tendency to diminishing returns shows itself also in constructive industry, though not to the same degree as in the purely extractive branches of production. A manufacturer aims at using his plant to full capacity, and as he approaches that point he enjoys increasing returns or diminishing unit costs. But there is a possibility, in his desire to get the utmost from his resources, of carrying production to the point at which additional units cost him more and not less. In regard to motive power, for example, he may find that a greater expenditure in fuel will not yield a more than proportionate, and, beyond a point, will result in a less than proportionate, increase in power. Similarly, in transport there is known to be a most economical speed; to add, for example, to the speed of a car or lorry by 20 per cent may require a greater petrol consumption to the extent of 50 per cent, not to mention the relatively greater wear and tear. The same principle applies to personal qualities. Many men can manage a business of moderate dimensions very successfully—their "return" is comparatively high—but fail to show the same degree of success when the business is enlarged. The number of instances of this kind could readily be multiplied.

Thus, it is not correct, as is sometimes maintained, that diminishing returns are typical of extractive industries and that increasing returns are to be found only in constructive industries. Increasing returns are not unknown in agriculture, while, as we have shown, manufacture is not exempt from increasing costs. It may be said in fact that the two sets of forces are always tending to operate. In agriculture and similar occupations, nature plays a large part and man has but limited opportunity of exercising his ingenuity. In manufacture, on the other hand, the restrictive influence of nature is not so formidable, while the scope for man's inventiveness is almost boundless. But the same underlying forces govern all forms of production, and it is not allowable therefore to draw a rigid distinction between extractive and constructive industries and to formulate a different law applicable to each.

Lastly, attention may be drawn to those conditions under which the tendencies to diminishing and increasing returns balance each other, the unit cost of production remaining constant whether the output increases or diminishes. Some writers are led thereby to formulate a law of constant returns, but it can hardly be placed in the same group as the other laws. It is true that many concerns appear to have reached a constant level of production costs, but the propriety of attributing their position to a distinct set of forces is doubtful. The fact of constant costs can be explained from the interaction of the forces already considered without resort to the formulation of a distinctive law

SECTION 8

COMPETITION

PERFECT competition, though often postulated for purposes of reasoning, is rarely experienced in real life. It would necessitate full knowledge on the part of sellers and buyers, free mobility of labour, capital and commodities, and liberty of action unfettered by industrial organizations or the State. Some restraint on economic freedom is often essential in the public interests.

FORMS AND CONDITIONS OF COMPETITION

THE prevailing economic system is still often described as competitive, although, as we shall show later, the liberty of action, so dear to the political economists of former days, is becoming increasingly subject to interference, not only by the public authority, but also by monopolistic organizations which are growing up in almost every direction. We may, however, to begin with, ignore these limiting and "frictional" conditions.

The commonest form of competition, and the one usually understood by the term, is the rivalry between producers to find markets for their goods. The corresponding type of competition, though not so evident, is that between consumers to obtain supplies. The number of producers of a particular commodity is, of course, usually much smaller than the number of consumers, and therefore competition between the former lends itself more to organization. Representatives and advertisements offering goods for sale at reduced prices in order to gain orders are a prominent feature of our industrial system, whereas announcements of would-be customers offering larger prices in order to secure commodities are comparatively rare. On the other hand, as manufacturers have to buy their materials from outside concerns, there may be struggles with other firms to obtain supplies just as intense as the rivalry to find customers for the finished goods.

Particular types of competition are almost innumerable. Workmen compete for employment and higher wages. In another sense, they compete with the labour-saving machinery that has been provided out of capital. Capitalists compete for the best returns to their investments. Where goods or services can be substituted for one another the competitive element is again strong. There is competition between steel and concrete, between wool and silk, between railway transport and motor transport, between the cinema and the theatre. There is competition between localities and nations. Brighton extols its virtues as against other holiday resorts; American cars compete with European in most parts of the world; while in this country the goods of the Empire as a whole are advertised and sold in competition with those from other countries.

Some industries lend themselves more readily to competition than others. Where the advantages of large-scale and centralized production are very pronounced, there is a distinct tendency to combination, leading perhaps to monopoly. Where, however, the point of maximum returns is reached at a comparatively early stage, and unit costs begin to rise, the movement in the direction of integration is impeded. Instead of existing firms widening their activities and absorbing or amalgamating with other concerns, there is a greater likelihood of new firms entering the field and competing on fairly equal terms.

If perfect competition is to be achieved, certain conditions must be fulfilled. The first requisite is a full knowledge of the market on the part both of sellers and of buyers. Producers must be thoroughly informed of the quantity and quality of goods that their rivals are offering for sale, and of the prices that are being asked. Equally important, they must have some cognizance of their competitors' intentions for the future. It goes without saying that they should be fully aware of the requirements of the consumers. The latter, on their part, must have a no less adequate knowledge of the other buyers' wants and of the prices they are prepared to pay, as well as of the stocks, present and prospective, to be offered for sale. A highly-developed system of communication is therefore indispensable.

Secondly, there must be perfect mobility of labour, capital and commodities. Workpeople, for example, must not only have the knowledge of where better employment or remuneration is to be obtained, but must have the will and the means to take advantage of the circumstances and to move themselves, their families and belongings, from one place to another. Capital must be capable of being easily and cheaply transferred to those occupations that yield a higher return. Furthermore, it is highly essential that the facilities for transport should be so organized, and the charges in proportion to the value so low, that the products of industry can be quickly and cheaply transferred from their place of origin to their ultimate destination.

The third essential condition is freedom of the producers and consumers to act as they think best, without any restraint from some external body. Manufacturers must be permitted to produce their goods in whatever quantity and grade they choose. Consumers must have free access to all markets, and purchase from any dealers they prefer. There must be no dictation from any private or public body which will limit or alter the direction of economic transactions.

IMPERFECTIONS OF COMPETITION

It need hardly be said that such a combination of circumstances is rarely experienced. Even in the nineteenth century, the heyday of economic freedom, there were sufficient limitations to prevent the forces of competition from working themselves out to the fullest extent.

In the first place, sellers and buyers seldom possess the perfect knowledge of the market that was postulated above. Producers are not always well informed of their rivals' activities. There are still many industries in which the firms jealously guard their trade secrets, and in which, furthermore, custom and tradition play a large part. As for the declaration of future policy, it is hardly likely that the majority of firms will divulge their intentions and projects. The knowledge of "final" consumers is even more defective. Manufacturers and others who consume materials in the course of further production make special efforts to obtain full information of supplies, but this cannot be said of the average consumer of final commodities. Buying in much smaller quantities, final consumers have not an equal incentive to investigate the whole field before deciding on their purchase. Even if they are so inclined, they have not the same means of obtaining the required information. The wife of an ill-paid worker has to think hard in eking out her small household allowance, and is as likely as any consumer to know how to spend money to the best advantage. But even she is liable to make some error in laying out her few shillings. She may be misled by some specious advertisement or by a plausible shop assistant. Perhaps the offer of credit, which can be a real evil in poor quarters, induces her to purchase articles which ought not properly to be included in her budget. Consumers in the wealthier classes betray a still greater ignorance of market conditions, of which traders are not slow as a rule to take advantage.

The second condition of perfect mobility of labour, capital and commodities is not easily fulfilled. People are apt to be swayed by non-economic considerations, and for reasons such as family or local attachment, together with the expenses of moving, are not induced to change their place of livelihood, unless the additional remuneration or other attraction is considerable. The immobility between grades of employment, as contrasted with places of employment, is still more difficult to overcome. Free competition might be taken to imply equality of opportunity from the start, but we are still far distant from this ideal. In the meantime, certain occupations will be recruited largely from those people who have received special advantages, and movement between the "non-competing groups," as they have been termed, will remain very sluggish.

Capital on the whole is more mobile than labour, but it is only in the most liquid form that it can be said to satisfy the requirements of perfect competition. Even then, investments in the home country exercise the greater influence, and the interest must usually be well above that earned at home before capital is permitted to go abroad. The chief factor affecting the mobility of commodities is not so much the capacity for physical movement as the cost of transport. Where this cost is large in relation to value or bulk, mobility is hindered. Thus, there is a greater degree of effective competition in the market for gold than there is in the market for building-stone.

Thirdly, the actions of producers and consumers are nowadays subject to varying degrees of control. The restraint may come from some monopolistic organization inside the industry, and may take the form of fixing prices, or output, or selling field. On the other hand, it may originate with the State, which considers some intervention necessary in the public interests. The granting of patents and copyrights is a justifiable protective measure of this kind. Also, in those industries and services in which competition would lead to waste, such as railway transport and gas supply, the State grants monopolistic rights. And, almost from its inception, the public authority has intervened to ensure fair dealings and observance of contracts.

The imperfections of competition are responsible for certain disorders and abuses of the industrial system. Over-production, for example, of particular commodities is often due to faulty competition and resultant speculation. Production in modern times is mostly in anticipation of demand rather than for special orders, and manufacturers have to take the risk of finding markets for their products after they are made. If there are no means of obtaining information regarding the activities of competitors, there is the possibility of the producers in an industry turning out a larger volume of goods than can be disposed of at a profit. The liability to over-production is greater in times of rising prices, for then all manufacturers are eager to take advantage of the situation, and several of them extend their operations beyond the safety limit. The result may be a collapse of prices, failure of many firms, and industrial depression. Had competition been more effective at the beginning, the danger might have been avoided.

SECTION 9

JOINT-STOCK AND CO-OPERATION

WITH the growth of markets and of the scale of economic activity the joint-stock company has in many industries largely superseded the one-man business and the partnership. Besides associations for the provision of capital there are associations, as represented by the co-operative movement, for common production and marketing. Consumers' societies have had a greater success in this country than producers' societies. Though there is a certain outward resemblance, the co-operative society is of an essentially different character from, and enjoys some special advantages over, the competitive joint-stock company.

JOINT-STOCK ORGANIZATION

THE one-man business is suited to simple economic organization, but, as the market increases and the force of competition becomes more powerful, the tendency to some form of association becomes more pronounced. There are still, of course, thousands of one-man concerns, many of which are of considerable dimensions, and, despite the predictions of Marx and other economists of the nineteenth century, the number is not diminishing very quickly. A broad survey of these businesses, however, shows that they are, for the most part, concentrated in certain industries in which, for reasons previously explained, the economies of increasing returns are not readily attained. Even in those trades, such as retail shopkeeping, which were formerly regarded as the stronghold of the small tradesman, the power of the large multiple concern is steadily growing.

The partnership is the next stage in the evolution of the business unit, and may come about through a variety of motives. The original owner may not have the capacity to cope with the growing needs of the undertaking, or he may require new capital to provide for expansion.

The new partners may be actively engaged in the conduct of the business, or they may be of the "sleeping" type. The former kind of partnership is little different essentially from the one-man business. The latter, however, involves a division between capital ownership and capital control, which has become very marked in the joint-stock company.

The joint-stock company is the principal type of business unit at the present time. According to the Board of Trade returns, there are in this country about 100,000 companies with a total paid-up capital of about £5,000 millions, which represents a large proportion of the total national capital. The principle of limited liability is largely responsible for the growth of companies in the last few decades. Before this important concession was secured, there was a certain danger lest the supply of new capital should fall short of the demand, just at the time when Britain's industry and trade were rapidly developing and the need for capital was especially urgent. The change in the law gave the necessary protection to the investor, limiting his liability to the amount of his holding, and thus the feared shortage in the supply of capital was prevented.

Joint-stock organization wrought tremendous changes in the economic system. It was the means, in the first place, of collecting comparatively small sums from investors who previously had little opportunity of putting their wealth into productive employment. The aggregation of these sums into large amounts made it possible to increase the scale of production, thus improving the efficiency of the economic system as a whole. The joint-stock method not only enlarged the size of the industrial unit, but it also widened the sphere of economic control. The ability to purchase shares in an undertaking, which might be in competition with one's own, made it possible to obtain some voice in the direction of that business, and might lead eventually to monopoly. The acquisition of fifty-one per cent of the shares (or a larger proportion if specified in the registered constitution of the company) might be all that was required to achieve this end.

CO-OPERATIVE ORGANIZATION

Before proceeding to the advanced forms of industrial combination, we may note a type of economic undertaking which in some ways is akin to the joint-stock organization, yet in others is fundamentally different. Co-operative societies, in one form or another, have been remarkably successful in this country and on the Continent. In Great Britain roughly one half of the people are provided with more than one-half of their daily requirements from co-operative sources.

Co-operative enterprise is of two main kinds. People may join together for purposes of common production or they many associate for buying and selling, in each case dividing any surplus among themselves in some agreed proportion. Producers' co-operation is the older form, but has not been markedly successful in Great Britain. During the nineteenth century several attempts were made to develop and extend the producers' movement, notably by the Christian Socialists, but, despite several spasmodic bursts of enthusiasm, comparatively little progress was made. In several European countries, however, the producers' movement has had a larger measure of success, but the consumers' societies are not so numerous as they are here.

There is another form of producers' co-operation which must be distinguished from that form which manifests itself in self-governing workshops and similar undertakings. Co-operation among farmers, for example, in the purchase of machinery or the selling of their produce, is in a different category from workmen's co-operation. Similarly, co-operative banking and insurance, which have been remarkably successful in some countries, have little in common with the producers' co-operation that was intended to be purely a working-class organization. These types of co-operation, in fact, have a closer resemblance to ordinary joint-stock practice than to co-operative production as usually understood.

Co-operation of consumers, as distinct from that of producers, has had a success in Great Britain far greater than could have been envisaged by the pioneers of the movement. Beginning less than a century ago, it spread quickly in nearly all parts of the country, especially in the new industrial areas, until it came to be one of the chief organizations for supplying the needs of the people. At first the societies were content with providing such articles as food and clothing, but gradually their scope widened, and there are now very few commodities in retail trade that cannot be obtained through co-operative agency. Even houses, motor-cycles, insurance policies, and other things that used not to be regarded as coming within the scope of co-operative selling, are now provided with the same facility as a loaf of bread or a pair of shoes.

Though the societies began primarily as distributive bodies, many of them set up productive departments to supply such articles as could easily be made on the spot. But in 1864 they made the momentous decision to grow and manufacture certain commodities for the whole movement, and for that purpose established the English Co-operative Wholesale Society, following it up five years later with a similar society for Scotland. The activities of the wholesale societies have so increased that nearly three-quarters of the articles sold by the retail societies are now produced in C.W.S. factories and fields. The wholesale societies possess, in addition to scores of factories, their own coal-fields, tea plantations and wheat lands, their own banking and insurance organizations, and give employment in the productive departments alone to nearly 100,000 people.

This important branch of co-operative activity must not, however, be confused with producers' co-operation as defined above. The people employed by the C.W.S. are in a somewhat similar position to the employees in any other well-conducted establishment. The profits are divided, not among the workpeople, but among the retail societies, which, like their own individual members, participate in the surplus in proportion to their purchases. The fact that the consumers, and not the actual producers, share the profits distinguishes the C.W.S. departments from the true self-governing workshops.

Joint-stock and Co-operative Methods Compared

Though there is an outward resemblance between joint-stock and co-operative methods, in that both forms of organization derive their capital from a number of shareholders, a slight examination is sufficient to reveal important differences in the structure and policy of the two forms of association. First, the co-operative societies, being with very few exceptions registered under the Friendly Societies Acts and the Industrial and Provident Societies Acts, and not under the Companies Acts, limit the shares held by any one member to a maximum of £200.

Secondly, the capital receives a fixed rate of interest, usually 5 per cent, and the profits in excess of the amount necessary to pay this interest are divided among the members in proportion to the value of their purchases. Some societies do not pay the full rate of interest to those shareholders whose purchases during the year have not reached a specified total. This method of distributing profits, needless to say, is entirely different from that adopted by the ordinary company.

Thirdly, each member is allowed one vote, irrespective of the number of the shares he holds. Thus, a person who holds the maximum number of 200 shares has no greater voting power than that of the poorest member who can just afford the minimum £1 share qualification. Voting by proxy is almost non-existent.

Fourthly, the share capital of a society can usually be withdrawn at short notice. The member therefore is safeguarded against depreciation, although, on the other hand, the shares in a very prosperous society do not command any premium. Some societies insist on their members holding at least one transferable share, but for the movement in general there is little need for any machinery to facilitate the purchase and sale of shares between one member and another.

Fifthly, there is no limitation on the number of shareholders in a co-operative society. The committee have the power to exclude a person who, in their opinion, is liable to act detrimentally to the interests of the society, but otherwise there is no restriction imposed.

The Economies of Co-operation

The co-operative societies have certain definite advantages over firms which are in competition with them and with each other. For example, there is the economy in advertisement. The co-operative societies are not under the same obligation to spend large sums in competitive advertising for the demand for their goods is steadier and their clientele is more assured. There is a justifiable expenditure in advertisement for securing new members (though even on this account the outlay per head is relatively small), but once people have been induced to join the societies the dividends and other advantages of mutual trading are usually sufficient to retain their custom. And, as there is, with few exceptions, not more than one society in a single area, the need for advertisement to induce people to come to a particular shop does not exist.

A corresponding economy occurs in the dealings between the wholesale and retail societies. Whereas a large staff of travellers and representatives are usually employed by manufacturers and distributors to secure the custom of the retail shopkeeper, the number required by the C.W.S. is naturally very small. In addition to these savings in the marketing of goods there are certain advantages, though not perhaps to the same degree, in the productive departments. The demand from the retail societies is regular all the year round, estimates of required stocks can be made with fair accuracy, and waste can thus be reduced. Also, there is nothing to be gained, as between one society and another, by the concealment of processes and the use of special brands. All fresh knowledge is willingly distributed throughout the movement, thus demonstrating a further economic advantage over firms that are in active competition.

SECTION 10

SCIENTIFIC MANAGEMENT AND RATIONALIZATION

THE difference between scientific management within an establishment and rationalization throughout an industry is only one of degree. Scientific management, along with the introduction of labour-saving machinery, can work out to the benefit of all classes, provided that certain conditions are observed. Similarly, rationalization holds out promise of general advantage, though it may be necessary to impose some degree of public control.

SCIENTIFIC MANAGEMENT IN SINGLE ESTABLISHMENTS

A FEW years ago there was a boom in "scientific management," and scores of books were published, especially in America, to advertise the new gospel. Of late the enthusiasm for the movement has assumed a more moderate tone, partly because the limitations of the supposed science have become more widely recognized, but chiefly because the wider claims of "rationalization" have captured the public fancy. Scientific management, as ordinarily understood, is primarily concerned with the human factor in industry, while rationalization is taken to cover a much larger field. Although, strictly speaking, it would be correct to regard rationalization as a particular expression of scientific management—i.e., as applied to industrial and commercial policy as well as to conditions of production and employment inside the walls of an establishment—the common usage of the terms may, for our present purpose, be retained.

Scientific management aims at securing within a factory the maximum return for the minimum amount of expenditure, and, as applied to a single workman, endeavours to get from him the greatest output for the smallest effort. The two objects are not quite identical, for, whereas the former is largely a matter of intelligent organization and division of functions, involving the most useful arrangement of all the services and implements at one s disposal, the latter involves the close supervision and direction of individual operations with a view to the elimination of all wasteful or comparatively unproductive effort. Indeed, as often defined, scientific management is chiefly concerned with this purely personal direction, the advantages of the wider form of specialization being so generally recognized as to require no special campaign.

Scientific management, fully carried out, entails a double form of investigation; first, the study of the motions undergone in carrying out a task, and, secondly, the study of the time necessary for its performance. F. W. Taylor and his disciples were fond of experimenting with individual operations until a piece of work could be completed with the minimum number of movements and in the minimum time. Experts were specially appointed to study every motion from the beginning to the end of a particular task, and were provided with the most elaborate instruments for the purpose of taking exact measurements. After minute examination of the operations performed by a number of representative workers, experiments would be made for modifying particular motions, altering their direction, eliminating some of them altogether, instituting rest pauses at definite times, and so on; and when the point of maximum efficiency was reached, the formula would be generally applied to all engaged on that kind of work. The study of the time spent on the task naturally plays an important part in devising the formula, but, more often than not, the time factor is regarded chiefly as a basis of a special form of wages calculation. In the construction of many premium bonus systems, for example, time study has an important place.

Scientific Management of Industrial Groupings

Though rationalization is of much wider scope, the difference is largely one of degree. In a scientifically ordered establishment every effort is made to reduce waste and secure maximum output. The latest processes and machinery are introduced; specialization is made more intensive; unnecessary motions and comparatively unproductive capital goods are eliminated. Much the same kind of thing is done, on a larger scale, under schemes of rationalization. Instead of regarding the individual business as the unit, the internal construction of which has to be improved, the rationalizer looks upon the industry as a whole, and endeavours to rearrange and, if necessary, reconstruct the entire industrial grouping so as to economize in costs and make production more advantageous. He cannot, of course, study and experiment with the several firms in the same way as the scientific manager deals with the men under him: partly because the numbers are much smaller; partly because the activities of apparently similar firms show far more variation than do the activities of a number of workmen in a particular occupation; but mostly because the rationalizer has rarely the same power as the scientific manager of imposing his will on the individual units. The workpeople in a factory that is "scientifically" managed have little opportunity of expressing their dissatisfaction, if they have any, with the methods in operation. Should they throw up their work in protest, there are many others who would gladly rush in to take their places. Under rationalization, on the other hand, the firms have normally to be coaxed into the scheme and they often demand a good price as a condition of entrance. If there happens to be an establishment that is closed down under the new management, the owners are not necessarily the losers, but often receive compensation from a common fund. Should their machinery need to be scrapped, and have to be replaced by more modern plant, the cost would not fall on them alone. On such grounds, therefore, the analogy between scientific management and rationalization breaks down. Rationalization may lead to a wider use of scientific management, but the one is not merely a larger edition of the other.

Both share the advantage that, properly applied, they result in a more economical system of production. Investigations have frequently proved that scientific management schemes have often more than doubled the quantity of output, while the quality, too, has shown an improvement. Though it is not so easy to compute the results of rationalization schemes, especially as the records are fewer and cover a much shorter period, there can be little doubt that the resultant economies are no less considerable. In Germany and America, where the movement has made rapid strides during the past decade or so, there is ample testimony to the cost and price reduction that rationalization makes possible, and in this country, too, the process has been speeded up in order to keep pace with the developments abroad. Where firms show reluctance to enter upon a scheme of rationalization, the reason is usually to be found in their apprehension of their future position in relation to other firms rather than in any doubt of the general economies that are likely to accrue.

NEW PROCESSES AND UNEMPLOYMENT

The arguments directed against scientific management and rationalization are in the main concerned with possible dangers that befall certain of the participants, and rarely with any inherent disadvantages in the schemes themselves. Chief among the drawbacks is the increased liability to unemployment. Could it be shown that the unemployment was due purely to temporary dislocation at the time of the change-over, the position would not be so serious, or even peculiar, for almost every step forward in the art of production is bound to alter the demand for certain types of labour. Unfortunately, however, the events of the last few years do not give support to the comforting argument that the dislocation is merely transitional in this sense, but point to the existence of some deeper causes.

The bearing upon unemployment is really two-fold. First, certain of the workers are liable to dismissal as a result of the improvements both in individual operations and in technological processes. For practical purposes these may be considered together. Secondly, the workers are in danger of a like fate when there are changes in the administration and organization of industry in general. The same principle underlies both forms of change, but the manifestations are sufficiently different, at any rate on the surface, to warrant separate examination.

The conventional argument that machinery (or scientific management) in the long run does not increase unemployment, but even diminishes it, is well known and need not be developed here in any detail. Briefly, it is maintained that the wider use of the new methods causes the costs of production to fall. On this point there can be little dispute. Next, it is contended that the reduction in costs leads to a reduction in prices. Here there is some uncertainty. If competition is strong, the fall in prices may be assumed, but if there is some monopoly, whether open or concealed, the automatic drop in prices cannot be taken for granted. Suppose, however, to continue the argument, that prices do in fact show a reduction. It is next asserted that the demand will be so stimulated as a result that those discharged may find work again, and that the ultimate effect of machinery and new processes on employment, therefore, is not harmful but beneficial. But here, also, there is an obstacle to be surmounted. The demand for the product may not be so elastic as the above reasoning postulates. The production of comparatively new articles, such as radio sets, bears out the argument that employment is more likely to increase than to diminish, following the introduction of labour-saving devices, but all goods are not produced under the same conditions. Even in the sale of wireless goods there is a certain point in the downward price trend at which the demand is apt to harden, and beyond which an adequate expansion in sales following on a cut in the price cannot always be counted on. When we come to articles that have been in production for many years and are already very cheaply priced, the ill-effects on those in employment cannot be lightly dismissed as temporary. Thus, in the cotton textile industry, the introduction of machinery was for several generations accompanied (though not without temporary dislocation and distress) by an increasing volume of employment, but gradually, quite apart from the competition from newly developed countries, the potentialities of supply appeared to out-distance those of demand. And when we come to such articles as foodstuffs the limitations of the argument are even more evident, for the demand in such cases tends to be comparatively inelastic. Thus, the introduction of machinery in agriculture is certainly beneficial to the community as a whole, but the prospects of all the labourers returning to their employment are not reassuring.

Finally, the argument goes on, while there may be some who are permanently dislodged by machinery from the former occupations, increased opportunity for employment is to be found in the new industries, including the very important work of making the machines themselves. Here, too, the reasoning must be used with caution. Obviously, the argument that employment in the making of machinery balances unemployment caused by its introduction in other industries cannot be carried very far, for it savours strongly of the fallacy of living by taking in each other's washing. There is more substance in the other argument that fresh openings are being offered in the new industries that are springing up. The greater use of machinery has increased the volume of production and purchasing power, which in turn has expressed itself in an increased demand for new as well as old types of goods. Also, the greater leisure, that machinery alone has made possible, diverts this demand into channels that a generation ago were unknown by the masses of the people, with beneficial effects on employment in the new industries.

RATIONALIZATION AND UNEMPLOYMENT

Much the same kind of reasoning is applied to the effects on unemployment of rationalization of industry in the wider sense. The view is commonly held that the reduction in costs of production will react beneficially on prices and demand, and that the transitory unemployment will eventually be more than made good by the improvement in trade conditions. Few exponents of rationalization at the present time deny that an immediate effect of their proposals may be to swell the unemployment figures, but almost all of them emphasize the transitory character of the dislocation. They point out, however, that it is not sufficient to judge from the immediate impact on the unemployment returns, but that regard should be paid to the probable situation if schemes of rationalization are not adopted and carried through. Our foreign rivals have rationalized and have not escaped unemployment in consequence. But, once their industry is reconstructed and re-equipped, their chances of competing in the world market will be considerably enhanced, and, if the producers in this country do not follow suit, their position in the world's trade will be further prejudiced, and unemployment will become even more serious.

The force of this argument cannot be denied, and it is coming to be recognized that the liability to unemployment, provided it is temporary, as the above exponents maintain it to be, is not sufficient reason by itself to invalidate the schemes of rationalization. But suppose a project passing under this name is merely a plan for securing a monopoly and for raising prices. Suppose that the much desired stability, that control of output is supposed to bring, turns out to be fixity of supply at a low, though highly profitable, level. Suppose that as a result unemployment perpetuates itself. Suppose that manufacturers, in general, find themselves in the dilemma of having an enormous producing capacity catering for a limited demand which apparently never can, under the prevailing conditions, keep pace with production and threatens even to diminish. Taken together, these suppositions are too serious to be ignored. A business man who, in his own interest, is embarking upon a scheme of rationalization, cannot be expected to give much thought to the indirect repercussions to which his action gives rise. But that makes it all the more the work of the economist, in his position of comparative detachment, to ponder over the numerous reactions and to try to envisage the general results of such a policy, if permitted to be carried through without some measure of public direction or control.

LIMITS TO RATIONALIZATION

In so far as rationalization means a more economic order of production, there can be no question of its inevitability and extension. In one form or another, it has been going on for a century or more, and, as has been said more than once, there is nothing new about it except the name. But, just as the technical and other innovations of the Industrial Revolution took many decades before they were in widespread use, so it is likely that the modern rearrangements commonly associated with rationalization will take a long time before they are universally adopted. It may happen, too, that frictional influences and counterforces will impose a brake on the new movement long before it has reached its zenith.

The limits to rationalization fall into two main groups. First, there are the restrictive factors operating from within the industry itself. If the industry is one which is not adaptable to large scale organization, or, at any rate, does not permit of an appreciable fall in unit costs as the size of the business increases, there is obviously a limit to the activities of the rationalizer. If, further, the industry turns out a commodity for which the demand is comparatively inelastic, another check to the extension of production is perceived. The organizer will still find scope for the elimination of waste, for concentration and co-ordination, and so on, but there will be little incentive to increase the scale of production. If costs are reduced, the benefits will tend to remain with the producer, and not to pass on to the consumer. These and similar factors inherent in the industry itself have already been touched upon, and there is no need to enlarge upon them afresh.

Secondly, there are the external limiting factors, which are in many ways more important, though they are not always so obvious. One result of rationalization, often lost sight of, is that the benefits to one group of concerns may be cancelled by corresponding losses to another group. Suppose, for example, that a number of independent concerns, which have in the past bought their materials and sold their products in competition with one another, now decide to combine. To the extent that they effect real economies in buying and selling as a result of the new policy, the benefit is general and involves an addition to the net income of the nation. But in so far as they are able, through a single policy, to force down the prices of their suppliers, or to force up the prices of their customers, the greater profits thus obtained are no criterion of an improved economy.

A limitation that is more serious than appears at first sight arises from the growth of secondary trades. Rationalization, including mass production and standardization, has made greatest strides on the whole in those industries that cater for people's primary needs. Consumers, in order to satisfy their necessary wants, do not insist on wide variety or on special brands or sizes, but are content with articles of standard form and quality that lend themselves to production on mass and standardized lines. When, however, their first needs have been met, people are a little more particular in satisfying their secondary wants. Though cheapness is still an important factor, it is not always the only consideration, and scope is offered therefore to those who, producing on a comparatively modest scale, can adapt their products to special requirements and can change, more easily than mammoth concerns, the character of their products to meet such altered conditions as fashion or other reasons may dictate. Admittedly, there are important exceptions, such as to be found in the motor-car industry (which, however, despite mass-production methods, can turn out a wide variety of styles), but in general it remains true that in the secondary industries the limits to rationalization, as commonly understood, are experienced at a relatively early stage.

Finally, there is the limitation, to which reference has already been made, that arises in the absence of a proper balance between the potentialities of production and the effective demand of consumers. The rationalizer on the one hand increases his productive powers, but does not always succeed in creating a market that justifies production at its maximum scale. If, as commonly happens, the number of employees is actually diminished, there is danger even of a decline in purchasing power. This is the dilemma out of which a way has to be found before the fruits of rationalization can be enjoyed to the full.

SECTION 11

COMBINATION AND MONOPOLY

INDUSTRIAL combination takes place in both a vertical and an horizontal direction, and in certain circumstances tends to lead to monopoly. Monopolistic organizations vary to some extent from one country to another as a result of special physical and legal conditions.

VERTICAL INTEGRATION AND HORIZONTAL COMBINATION

INDUSTRIAL combination is almost as old as industry itself. The earliest accounts of economic activity record attempts, successful or otherwise, at the joining of forces for the purposes of greater efficiency or for obtaining greater control over the market. In the Middle Ages, for example, the practice was regarded as sufficiently important to warrant special legislation and the appointment of officers to prevent such combination as would interfere with fair trading and a "just price." It was not, however, until the nineteenth century, when the changes in technique and organization had altered the economic structure of the principal countries of the world, that the combination movement attained serious dimensions. The tendency to increase the size of the business unit, due to the pronounced economies of large-scale production, was further stimulated by the device of joint-stock organization, which, as we have previously pointed out, made it possible to collect large amounts of capital from the investing public under the control of comparatively few leaders. Changes both in industrial technique and in commercial policy have been equally responsible for the growth of the mammoth firms and monopolies that are characteristic of the present age.

Combination takes place in two main directions. It is described as "vertical" when the firms which integrate are engaged at different stages in the production of a commodity, and have not therefore been in rivalry with each other. It is described as "horizontal" when the firms are of a similar character, and, in the absence of combination, capable of direct competition. Thus, for instance, there are large organizations which possess their own coal and iron mines, their blast furnaces, and all the other necessary plant for the production of iron and steel goods from beginning to end. On the other hand, there are concerns, perhaps no less ambitious in the scale of their turnover, which are made up of units that are, as it were, all on one level. Combination may be effected between colliery owners, or between steel manufacturers, or between distributors of the products, resulting in a united policy in their dealings, backwards with the suppliers of materials, and forwards with the customers for their goods.

Motives for Combination

The motives prompting vertical and horizontal combination respectively are not necessarily the same. The chief object of vertical integration is doubtless to secure greater economies in production. Particularly in such industries as iron and steel manufacture there is a considerable saving in fuel and time, for the articles can pass through several stages in the course of their production without being allowed to cool. It is literally a case of "striking while the iron is hot." There is also the motive, which can readily be appreciated, of producing one's own materials and plant, not only for the sake of the added gains, but because of the greater dependence that can usually be placed on the quality of the goods and the regularity of delivery. On the distributive side it may be intended to deal directly with the retailer and even with the consumer, thus cutting out some of the middleman's profits. Also in countries, such as Germany, where a turnover tax is in operation, a certain impetus to vertical combination is afforded by the fact that, as no actual sale of goods takes place between one stage of production and another, no tax can be imposed on any turnover beyond that at the end of the chain of production.

The desire for monopoly may or may not be a dominant motive underlying vertical integration. There are some firms, for example, which produce their own cloth (or have some control over its manufacture), make it up into clothing in their own factories, and sell the wares in their own multiple stores that are scattered all over the country. But they have no monopoly of the clothing industry, nor apparently have they any such aim in view. There are mammoth concerns that produce drugs and toilet wares in their own factories and sell them in their own stores over a vast area, but they do not possess a monopoly. The objects of these extensive undertakings are no different in principle from those of large-scale production in general. Competition in these industries still remains effective.

Horizontal combination, on the other hand, though by no means incompatible with the continuance of competition, is more liable to reach in the direction of monopoly. There are the usual economies to be obtained from buying and selling in large quantities, spreading the overhead charges over a greater volume of business, and so on, but in addition there is often the wish to acquire a wider measure of control over the purchase of materials and the sale of products. The purely technical economies of horizontal combination are not so important, as a rule, as those of vertical integration, but the power of monopoly enjoyed by the former type of association is usually much greater.

The most effective form of combination, of course, is that which integrates firms in both directions. A huge undertaking, such as Imperial Chemical Industries, Ltd., or the United States Steel Corporation, spreads its activities right from the getting of raw materials to the selling of an almost infinite variety of products. And at nearly every stage in the vertical combination it has developed its operations horizontally to embrace businesses of a similar type. Similarly, a large omnibus company extends its interests in a vertical direction when it decides to manufacture its own vehicles, and in an horizontal direction when it enters into some mutual arrangement, if not actual amalgamation, with railway and tramway organizations.

Conditions Favouring Monopoly

Though combination is often the first step in the formation of a monopoly, it does not necessarily have that result, for something more than mere size is necessary to bring about full control over the total supply. On the other hand, a monopoly may in certain circumstances be effected without any preliminary combination at all, and may in fact be of quite moderate dimensions.

The forms that monopoly takes, as distinct from the actual type of structure, which we shall examine later, vary considerably in their character, and do not lend themselves to a straightforward classification. The simplest form, perhaps, is the possession of the natural sources of supply of a commodity. These "natural" monopolies may range in size between comparatively small undertakings, such as the supply of waters from medicinal springs, and giant organizations, such as the coal syndicates to be found in Germany. Man plays his part in the exploitation of the monopoly, but the original cause is to be found in the close concentration of natural supplies.

Where the disposition of natural materials and forces results in the localization of an industry, the conditions are favourable to the formation of a monopoly. Even where the localization is due to artificial causes, the chances of monopoly are greater than where the industry is widely scattered. There is more opportunity for the business leaders to meet together and discuss policies for mutual benefit. Though the firms may preserve a measure of independence, so far as concerns their internal administration, they may nevertheless present a united front to their customers in the matter of prices and qualities.

Conditions, too, on the side of demand may be favourable to monopoly. If, for example, the commodity in question is one for which the demand is very inelastic, i.e. if a movement in the price is not likely to cause a considerable alteration in the demand, there is a strong inducement for rival firms to arrive at some agreement not to undercut each other, and even to adopt the more positive policy of raising their prices above the existing level. An inelastic demand, however, is only one of many factors, and its influence on monopoly may easily be offset by other considerations. The demand for bread is extremely inelastic, but there is no monopoly of its supply. The demand for diamonds on the other hand is extremely elastic, yet the monopoly is very effective.

STATE-GRANTED MONOPOLIES

Monopoly powers are often granted by the State. Patent rights and copyrights are old and well-known instances that require little comment or defence. The State also affords exclusive powers to certain firms, if unity of action and policy is essential to economic efficiency. Thus, a railway company is given sole rights to construct a track from one point to another; a water or an electricity company is entrusted with monopoly rights for a whole area.

This form of monopoly is quite legitimate, for the existence of competing railway tracks or electric cables or water pipes must almost necessarily involve some degree of waste. Occasionally, the State may take the initiative in inducing rival undertakings to enter into some combination. The post-War amalgamations among the British railway companies were largely due to the action of the Government, which recognized the economic advantages of a more unified management.

In a similar category, as judged from the economic standpoint, are the publicly operated industries, such as the postal and broadcasting services. The motive for public monopoly is not so much that of profit as that of economy and efficiency. The carrying of letters or the telegraphing of messages must be in the hands of a single body if a fully satisfactory service, at a uniform scale of charges, is to be provided. The same rule applies where local bodies have acquired sole powers for running a tramway service or operating their own gasworks and electricity stations.

These various monopolies which owe their existence to State action are brought about consciously and deliberately. Government action of another kind, by means of protective tariffs and bounties, may, in regard to certain commodities, indirectly cause a monopoly to arise within the national boundaries. It used to be said that "protection is the mother of trusts," and the experience of America, and to a less extent of Germany, seemed to bear out the contention. The tendency is further strengthened when, as a result of the protection, the businesses grow in size and integrate in both directions.

The influence of protective duties, however, upon the growth of monopolies is not certain. The industrial combination that has been a marked feature in this country during the last few decades certainly owes its origin to other factors. The protective policies of America and Germany have doubtless helped in the development of certain monopolies, but it is unlikely that they have been primary causes. Monopolies have arisen there in industries which enjoy no measure of protection. On the other hand, there are countries which are very protectionist in character, yet in which no monopolies have arisen to any marked extent. And obviously those combines which are international in character cannot in any way be attributed to national protection and subsidy.

NATIONAL CHARACTERISTICS

The fact that monopolistic organizations have not developed on the same lines in all countries is partly du to special conditions, natural and artificial, which distinguish one nation from another. In Great Britain there are very few organizations that monopolize the sources of natural supplies. The combination in the salt industry is perhaps the only important organization that comes within this class. The coal industry is too scattered to have resulted so far in any centralized organization, comparable to the combines in Germany and elsewhere, though, partly as a result of recent legislation, selling associations for limiting output and fixing prices have been formed on a county basis.

The law relating to monopoly has had a certain influence on the growth and direction of monopoly, and, varying as it does from one nation to another, has in a small way been responsible for the several types of structure that are to be found in different countries. In Germany, for example, agreements between firms for the restriction of output and similar objects are legally enforceable, whereas in Great Britain and America such agreements might in many instances be regarded under the common law as being in restraint of trade and therefore not binding upon the parties. In Germany a number of semi-independent businesses may contract to divide the market in a specified manner or to conform to a stipulated scale of prices; and if one of the firms fails to observe the arrangement it can be penalized in the courts of law. In Great Britain and America there are many "gentlemen's agreements" between technically independent firms, and usually they are quite effective in achieving the desired control. But, should any of the parties sell his goods at less than the agreed price, or outside his allotted territory, or give any concession that is calculated to bring him more than his specified share of the trade, it is not always an easy matter for the central association to mete out what they consider an appropriate penalty. If the firm were a branch of a parent body, however, and directed by salaried managers, it would be more amenable to orders. For this among other reasons, the tendency to integration in the English-speaking countries has been stronger than in the Teutonic countries, although in recent years the amalgamation movement in Germany has rapidly developed on the American pattern.

To some extent the combination movement in several of the late belligerent countries was stimulated by the special conditions arising from the War. The governments often required to discuss matters with the representatives of important industries, and, where no trade association was already in existence, it was almost imperative that one should be formed. The establishment of a committee to represent the interests of an industry led in several instances to the creation of a more closely knit controlling body. A similar influence was exerted by the development of the large trade unions on vertical or "industrial" lines, and the need of some central organization of employers to negotiate with the workpeople's officials, who were pressing for concessions that would apply throughout an entire industry.

SECTION 12

MONOPOLY ORGANIZATION

MONOPOLY organizations may be terminable or permanent. Terminable associations range from simple and informal understandings to elaborate agreements for fixing prices, regulating output, dividing up the market, and pooling profits. The cartel, though nominally a terminable association, may achieve such dimensions that it often becomes difficult to distinguish it from the more permanent trust, which manifests itself largely at the present time through the holding company and the merger.

TERMINABLE ASSOCIATIONS

BROADLY speaking, there are four main types of industrial association. First, there is the association for the provision of capital, of which the chief form is the joint-stock company. Secondly, there is the association for common production and marketing, represented by the producers' and consumers' co-operative societies. Thirdly, there is the association for securing greater economies in production than are possible to firms working independently, manifesting itself in various degrees of vertical integration and horizontal combination. These three types of organization have already been considered, and we may now proceed to a closer examination of the structure of the fourth form of association, which has as its main object the single control over the market.

There are numerous stages of monopolistic organisation, ranging from simple unwritten agreements at the one extreme to complete amalgamations at the other, but they may, for convenience, be classified according to whether they are terminable or permanent in character. Probably the most elementary form of association for limiting competition is the informal understanding between growers, manufacturers, or traders with regard to prices and qualities of goods. Dairy owners are often in agreement as to the prices of their butter and eggs; seaside landladies have usually a minimum scale of prices for their rooms; while in the medical and legal professions there are customary charges for ordinary consultations and services. These informal understandings are more suited to local than to national conditions, though there are many instances of such agreements effectively regulating charges throughout a very wide territory.

The next stage is found in the more formal agreements between producers or merchants for the purpose of fixing prices, or regulating output, or dividing the market, or allocating contracts. Such associations must be distinguished from those which have a greater technical efficiency as their object. Price agreements do not result in any appreciable economy, and may be instrumental in preserving the less efficient firms at the expense of the more efficient, which, but for the agreement, might extend their market and squeeze out the inferior competitors. As the agreements are not, in so far as they are in restraint of trade, enforceable at law in this country, they are apt to break down in periods of difficulty. In order to capture some of the dwindling market, some of the firms are liable openly to reduce their prices, or resort to such devices as special discounts or secret rebates.

Arrangements for fixing prices may or may not be accompanied by agreements for regulating output, the effectiveness of which varies according to the character of the industry and the opportunities for co-ordination. In certain industries, notably those in which suppliers are required to tender, there are organizations for allocating contracts. The central association determines which firm is to be favoured with the order, and the other firms are induced either not to tender at all, or, for the sake of appearances, to tender at high prices. In other industries, where the geographical factor and the cost of transport are important considerations, specified areas are assigned to particular firms. A saving in transport costs may thus be achieved, but otherwise there is no appreciable economy.

Pooling associations, of which there are several kinds, present another stage in the development of monopoly. A simple form is that in which each constituent firm pays a definite sum per unit of output into a central fund, which, after an adequate amount is set aside for a reserve, is periodically distributed among the members. A more advanced type of pooling association is that in which the constituent firms are allotted a specified percentage of the total output of which the associated firms are capable. Firms that produce more than their stated proportion may have to pay into the pool amounts bearing a definite ratio to the amount of the excess; firms that produce less than their percentage may receive from the pool a certain compensation varying in some pre-arranged ratio with the amount of the deficiency.

Cartels

An important type of monopolistic organization is that represented by the selling agency. The most elementary form is the establishment of a central sales bureau, through which all the output of the firms in association is disposed of. The motive is the prevention of undercutting, and the price level may be maintained with or without the regulation of output.

The term "cartel" is often employed to refer to all selling agencies, but it is preferable to restrict it to the more closely knit syndicates, which have a control over the market almost as effective as that of the complete amalgamation. The line between the terminable and the permanent associations here becomes rather vague.

Though the association may be ostensibly formed for a definite period, and be brought to an end by mutual arrangement, the cartel may go so far towards a complete unification and control of an industry that the chances of dissolution are extremely remote.

The most usual form of cartel in Germany, the home of this type of organization, is the participating cartel with selling agency. The members set up a central sales bureau, through which all the output must pass. The selling syndicate is registered as a company, and the constituent firms have a voting power according to their size and output. Each member is allotted a definite share, or "participation," in the total amount produced. Firms which exceed the quota have to pay to the syndicate a sum of an agreed proportion, while those which produce less than the permitted amount receive from the syndicate a certain measure of compensation. The firms fix a base price for their output, and sell to the syndicate at a usually higher "accounting" price. The cartel then disposes of the goods at the best prices obtainable. Where the market covers a large area, the association may make differential charges according to local conditions and special circumstances. It may extend its powers beyond the national boundaries, and, as in the case of the well-known German Steel Cartel, become an economic and even political force of world-wide importance.

The cartel itself makes no profits, for all gains, as well as losses, are shared among the component firms. The members, apart from the control over the selling end, are left free to produce in their own way, and those who possess special ability or other advantages making for lower production costs are enabled to earn higher profits. Though competition is effectively repressed in the final disposal of the goods, it need not be absent during the process of manufacture.

In many associations of this kind there is nothing to prevent one member from privately purchasing from another the right to produce the latter's quota of output, and in Germany several of the larger manufacturing concerns have taken full advantage of this power. The compensation paid to the firms who have transferred their quota may be likened to a levy upon the industry. Presumably the concerns that have acquired the additional quotas repay themselves from the economies of large-scale production, but this does not justify, from the point of view of the community, the annual grants to the non-producing firms. The system has, in fact, been criticized for unduly protecting the inefficient firm, which, having gained its rights to contribute a quota, can dispose of its privilege to the highest bidder and live a parasitic existence, or, alternatively, dispose of its product to the syndicate at a higher price than it could possibly charge under conditions of competition. On the other hand, it should be stated, the selling price to the cartel is not altogether arbitrary, but bears a certain relation to the normal costs of production. The lower costs of the more efficient firms thus tend to limit, to some extent, the opportunities for abuse.

PERMANENT ASSOCIATIONS: TRUSTS

We have already observed that the cartel may attain such dimensions and powers that it becomes little different in practice from the permanent amalgamation. Indeed, in recent years the combination movement in Germany has developed so much in the iron and steel, the chemical, and other important industries as to assume the form of physical integration. Among the minor reasons for the closer combination now to be found in Germany are, as previously stated, the turnover tax, in order to avoid which at each stage of production firms have integrated their interests, and, also, the temporary reduction of the stamp duties that are payable when an amalgamation is formed. But probably the chief motive is to facilitate the rationalization of industry with its attendant economies.

Permanent combinations for controlling the market are generally described as trusts. Though they are most usual in the United States, trusts on the American model are also to be found in Great Britain and in many European countries. An early form of this organization was the "voting trust," under which a number of formerly competing firms agreed to hand over their stock to a number of trustees, who were thus enabled to control the several firms as departments, in effect, of a single concern. This particular type of combination came into conflict with the American law. The Sherman Anti-Trust Act of 1890 forbade "every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several States or with foreign nations." The illegality of the "voting trust" was confirmed in 1892 in the decision of the Supreme Court against the Standard Oil Trust, and subsequently monopolistic organizations took on a different guise.

The holding company is a further stage in the evolution of a complete amalgamation. A number of firms sell their shares, or a controlling proportion of them, to a holding company, and receive shares in that company in exchange. The legal requirements are supposed to be met in that the firms nominally retain their independence. In matters affecting price-fixing and general policy, however, the firms are entirely subordinate to the holding company, which exercises an effective control over the whole market.

A still greater measure of unity is reached when the firms decide upon a complete consolidation of interests, and form a merger. There is no longer any question of members acting insubordinately, or breaking away from the combine, for, as individual firms, they have ceased to exist.

A comparison between the cartel and the trust shows that each type of organization possesses its own special advantages. The members of a cartel must to some extent benefit from their independence of action in their own factories and territory. They are not altogether at the mercy of a central corporation, which, in the interests of the more powerful members, may adopt a policy which is unprofitable and even fatal to the smaller concerns. On the other hand, so long as the production is carried on by a large number of semi-independent units, it may be impossible to secure all the economies that a complete scheme of rationalization would demand.

The trust is in a better position than the cartel to increase the economies of production. Whereas the cartel may be content with controlling the sale of goods, the trust, in its advanced form, supervises every stage in production from beginning to end. Where it has developed on "vertical" lines, it may have complete powers, from the obtaining of the raw material to the disposal of the final product. There is, however, a twofold danger. Several trusts at the present time are seriously over-capitalized, owing to the fact that, when the organization was first formed, stock was issued to cover, not only the original and tangible assets of the concerns, but also the capitalized value of the anticipated extra profits due to the monopoly. Cartels are not so liable to this defect. The second danger is to be found in the bureaucracy that is liable to result from the mammoth trust. Where leaders are found sufficiently able and far-seeing to control a vast undertaking, and adequate methods for the devolution of functions are adopted, there is little fear of sluggishness and inefficiency. But if, with the coming of a new generation of directors and the loss of the pioneer qualities, the organization is taken for granted, and routine takes the place of enterprise, the vitality of the trust may be sapped and much of its special justification on the ground of economic efficiency be lost.

SECTION 13

THE ECONOMIES AND LIMITATIONS OF MONOPOLY

THE economies enjoyed by the monopolist fall usually into two groups: those arising from production on a large scale, and those due primarily to a unified control over supply. The principal advantage from the point of view of the public is the closer adjustment of supply to demand, and the greater stability and regularity of production. Of the several dangers of monopoly, the chief is, perhaps, the liability to raise prices and artificially curtail supply. The power of the monopolist, however, is not unlimited. It is held in check, to some extent, by the elasticity of demand and by the use of substitutes, as well as by the possible revival of competition.

TECHNICAL ECONOMIES OF MONOPOLY

THE belief is not now so widespread as it used to be that the interests of the monopolist are necessarily opposed to those of the community at large. While there are undoubtedly glaring instances of monopolists abusing their power, and levying a heavy toll on the purchasing public, it is undeniable that monopolistic organization may achieve such economies in production as to compensate in some measure for the evils with which it is often accompanied. There are, in fact, two main groups of advantages which, in spite of a certain overlapping, should be separately considered. First, there are the economies attendant upon large-scale production, which are enjoyed by any extensive establishment, whether it has a monopoly of the product or not. Secondly, there are the benefits accruing to the monopolist, which are due primarily to his special powers of control over the market.

The first set of advantages need not detain us, for we have already studied them in connection with large-scale production in general. Though a monopoly is not of necessity a mammoth undertaking, its operations are as a rule sufficiently large to yield it all the advantages of an effective division of labour. When combination takes place, whether it be "vertical" or "horizontal" in character, there are, in addition to the purely technical economies, the gains resulting from the more efficient direction and from the spread-over of costs. So far, the economies are no different essentially from those enjoyed by any large competitive firm.

The second group of economies, though largely of a technical nature, and outwardly similar to those we have just indicated, result primarily from the unification of control. They are not all of the same kind and degree, for they naturally vary according to the type of the monopoly. Thus, for example, the economic advantages of the trust and the cartel are not identical. In the trust there is, as we have previously pointed out, a more or less complete fusion of interests, together, perhaps, with a physical integration of the undertakings. In such circumstances, the least efficient establishments are often closed down, and production is concentrated in the best equipped factories. In the cartel, on the other hand, the firms are combined primarily at the selling end, and there is no adequate supervision or control over the actual processes of manufacture. In these respects the trust tends to enjoy a material advantage over the cartel.

ECONOMIES OF UNIFIED CONTROL

A common form of economy, already touched upon, is to be found in the elimination of cross-freights. The market is so apportioned that each centre of supply serves the adjoining area, thus cutting down the transport costs to the minimum. Firms may come to such an arrangement, even though in other respects they retain their independence and powers of competition.

In a similar category is the saving in the costs of advertisement and representatives. The monopolist need only spend money in "constructive" advertising, for the purpose of increasing the total demand for his products and gaining further economies in production. "Competitive" advertising with the sole object of capturing a rival's share of the market, without any appreciable increase in the total volume of business, is obviated. Also there is not the same need, as under conditions of competition, for large numbers of agents and travellers. Those who are retained are usually given a smaller area than before to be worked more intensively, with a consequent saving of time and expense.

Firms in association benefit in addition from the dissemination of business knowledge throughout all branches of the combine. There are rarely any trade secrets between the members, who, furthermore, are permitted to make full use of all patent and similar rights that were formerly in the jealous possession of individual firms. Special brands and trade marks also pass into the common ownership of the organization as a whole.

Probably the chief advantage, from the community's point of view, that results from monopoly is to be found in the closer adjustment of supply to demand, accompanied by a greater regularity of production. It is a common criticism of the competitive system that, owing to the lack of effective co-ordination, manufacturers and growers are liable to produce goods in excess of the consumers' requirements. This danger is specially marked in times of improving trade and rising prices, when producers, in their haste to secure their full share of the improving market, are apt to pay too little heed to the activities of their rivals. "Over-production," even in the most favourable conditions, cannot always be prevented, for conditions of demand, over which the monopolist has no direct control, may be partly responsible. The most careful estimate of the consumers' requirements, based on statistics of demand in previous years, may be upset by a change in public fashion or tastes. Apart, however, from such circumstances, the monopolist is less liable to over-produce than firms in competition. He knows, at any rate, what is to be the total supply of a particular commodity. He adapts his machinery and plant so as to meet the anticipated demand, and no more. If in the past there have been too many factories turning out his class of goods, involving intermittent production and under-employment, the closing down of the least efficient establishments enables the more efficient to continue their activities with a greater regularity than before.

DRAWBACKS AND LIMITATIONS OF MONOPOLY

The commonest criticism of monopoly, apart from the supposed crippling of enterprise, is that, with the disappearance of competition, the price of the product is usually raised. Against this, two considerations may be noted. It frequently happens that the period preceding the amalgamation or mutual marketing arrangement is one of such intense and suicidal competition that the goods are selling at less than the cost of production of even the best equipped firms. Prices cannot remain indefinitely at this low level, and when eventually they go up, following either the failure of the weaker competitors or the decision of all to amalgamate before ruin overtakes some of them, part of the increase represents nothing more than a return to the normal level.

The second qualification of the contention that monopoly increases prices is that the power of the monopolist is not absolute, and that his policy is to some extent determined by the character of the goods he is selling and by the elasticity of the demand. If variations in the price are likely to bring about appreciable fluctuations in the demand, he may be unwilling to risk a shrinkage in sales and profits, and may decide instead to keep on selling his goods at the old price level.

More serious, perhaps, from the public point of view, is the restrictive policy commonly adopted by the monopolist. To the extent that he carefully adjusts supply to demand, thus preventing periodical over-production, he is stabilizing trade conditions and rendering a public service. But this is not his sole motive. His object is to make the maximum profit, and with this end in view he may cut down supplies to such an extent as to cause hardship to many would-be consumers. A restrictive policy of a no less reprehensible kind is adopted by several monopoly organizations which buy up patent rights of new inventions, not with any intention of exploiting them, but simply with the object of preventing new forms of competition from arising.

Perfect monopoly is as rare as perfect competition. It is just as difficult to find a state of affairs in which the monopolist has absolute power of control over the sale of his goods as it is to find those frictionless conditions which we associate with free competition. Also, comparatively few monopolists are so favourably placed that they can ignore the possibility of substitutes. New fuels, new materials, new processes, are for ever being sought after. The more a monopolist charges for his goods, the more inducement there is for substitutes to be invented and applied. If the monopolized product is one for which a substitute is liable to be discovered, the seller will not necessarily charge the highest price, even though an immediate contraction of the demand is not feared.

Further, the monopolist, unless he feels fully secure against potential rivalry, may prefer a moderate profit, which is likely to continue for a number of years, to heavy immediate gains that are liable to induce competitors to re-enter the field. If his position is due to the appropriation of all the natural supplies of a certain commodity, he will not fear rivalry in the same line of business, though he may still have to contend with the possible use of substitutes. If he owes his monopolistic position to the possession of expensive plant and machinery, his powers are more limited, for, if the prospective profits are sufficient to warrant the outlay of further capital, competition is not unlikely to revive. If his monopoly is due to his efficient organization, small unit costs, and low prices, it will continue only so long as he maintains that policy, rendering competition ineffective by the superiority of his methods.

SECTION 14

PUBLIC CONTROL OF MONOPOLY

THE numerous proposals that have been made for curbing the powers of the monopolist come both from competitors, who complain against the methods of selling, and from the customers who grumble at the high prices charged. The main difficulty is to regulate monopolistic organization in such a way that the admitted technical and administrative economies of unified direction will not be diminished. There has recently been a pronounced change in the public attitude towards combinations; the repressive legislation in America, for example, has during recent years undergone considerable modification.

PUBLIC POLICY AND COMBINATION

WE have seen that industrial combination is advantageous in that it usually promotes technical efficiency and tends, by a closer adjustment of supply to demand, to stabilize conditions of trade. On the other hand, we have observed that the integration of business units, especially where it leads to monopoly, is liable to result in excessive profits at the expense of the consuming public, and to give an undue economic power over production to a small group of people. The subject presents so many aspects, and affects such a variety of interests, that the question of public policy is not an easy one to settle. Further, owing to the different conditions—economic, political and legal—prevailing in the several industrialized countries, the success or failure of a particular policy in one part of the world does not necessarily imply a similar result elsewhere.

A view which used to be very common, though it is not so popularly held at the present time, is that all combines and trusts should be broken up. This proposal rests upon the assumption that the disintegration of the monopoly would restore free competition and all its supposed benefits. Experience, however, does not warrant such a conclusion. No legislation could prevent firms from entering into private and informal agreements to raise prices or limit output, where such measures promised to be to their common advantage. But even if it were practicable to compel a return to competition, would it always be desirable? Cut-throat rivalry is not without its dangers, to the public as well as to the competing firms, while the losses due to overlapping and possibly over-production may easily nullify the economies of individual initiative.

Control of Monopoly Prices and Profits

Proposals for the control of monopoly come both from the smaller competitors, who complain against the methods sometimes adopted in order to drive them out of business, and from the customers of the monopolist, who grumble at the high prices which he exacts. These customers belong not only to the general consuming public, but also to those manufacturers and traders who are dependent for their materials and stocks on monopoly concerns. Schemes for control, therefore, may aim either at ensuring fairer methods of competition or at preventing the monopolist from taking undue advantage over the purchaser of his products.

The former type of scheme depends, of course, on the particular method adopted by the monopolist that is deemed to be unfair. Thus, if he discriminates in his prices in different regions according to the effectiveness of competition, legislation may compel him to charge the same rates for goods of a given grade throughout a whole country, variations being permitted only in respect of transport costs. An attempt in the United States, however, to prevent price discrimination in the sale of oil was defeated by the device of special low-priced brands which were sold only in those districts where competitors were to be found. The trust leaders have usually been astute enough to find loopholes in the law, or to discover new and no less effective methods of dealing with their rivals.

More important, from the public's point of view, are the attempts to control the monopolist's powers in relation to the consumers. One method that immediately suggests itself is for the State to fix maximum prices for the particular commodities or services in question. The railway companies, for example, enjoy certain monopoly powers under the protection of the State, which has, almost from the beginning, exercised some influence over the scale of charges. At the present time railway rates are fixed by a public body, the Railway Rates Tribunal, which calculates on the principle that 80 per cent of any profits must be devoted to the reduction of charges. It is not every monopoly, however, that permits of this method of control. The services of a railway company can be readily graded. The products of other industries do not, as a rule, lend themselves so readily to price-fixing, and may vary in character, size and quality to such a degree that public regulation of prices becomes a very complicated task.

An alternative proposal is to leave the prices to be fixed by the monopolist, but to place a maximum on the profits of the business. Gas, water, tramway and other public utility undertakings are subject to this kind of control. Success in the regulation of such profits, however, is not a proper criterion, since the undertakings are not representative of businesses in general. Monopoly has been essential from the start in the interests of technical efficiency and economical administration, and the State or local authority, as a condition of granting monopoly rights, has acquired some powers of price and profit regulation. But the majority of monopolies have developed independently, having had no need of, or no excuse for requesting, legal powers, and thus afford less opportunity to the State for intervening and keeping down profits.

Many other difficulties confront a policy of imposing an upper limit to prices and profits. It is possible that the fixing of a maximum price will be reflected in the quality of the commodity or service. It is equally possible that the limitation of profits will, in the absence of adequate safeguards, cause a decline in the efficiency of the undertaking. Then there is a difficulty of a different kind, but one which must be experienced at the very outset: how to define and demarcate the unit that is to be controlled. What exactly constitutes a monopoly? What proportion must it produce of the total output of the industry before it should be subject to public regulatory powers? On what capital basis should the profits be estimated? Should the original capital only be reckoned, or should any accretions to the value of the original stock be taken into account? It is obviously impossible to make the size of an undertaking the determining factor, for, as we have already pointed out, a monopoly is not necessarily a large-scale business, and a large-scale business is far from being of necessity a monopoly.

Again, if high profits are to be taken as the criterion, what policy is to be adopted in regard to those firms which, though not enjoying monopoly powers, make considerable profits, the percentage exceeding perhaps that accruing to the monopoly? It would hardly be just to restrict the profits of all monopolies, irrespective of their nature, to a certain rate per cent while competitive firms in other industries were permitted to make perhaps twice that amount of profit. In so far as the monopoly profits were due to the economies of unified direction and concentrated production, these special restrictions would in effect impose a penalty upon efficiency. On the other hand, competitive firms already making large profits would be dissuaded from amalgamating, for fear that the still greater profits would invite public regulation. These are but a few of the difficulties in the way of limiting profits. The chief danger to beware of is the premium on inefficiency that an injudicious limitation of profits might produce.

The Change in the Public Attitude

During the last decade or so a considerable change has come about in the attitude of the public and politicians towards industrial combination. Though the feeling of distrust has by no means disappeared, people are gradually recognizing that the economies of association and amalgamation may considerably outweigh the defects. The Reports of the World Economic Conference and of the Balfour Committee on Industry and Efficiency attach great importance to the increasing tendency to combination, international as well as national. Thus, the schemes that one meets with nowadays for dealing with monopoly are not, in the main, so ambitious or drastic as those which used to command much support.

Some would be content with a greater measure of publicity, which, they say, would be sufficient to destroy many of the abuses. For example, if holding corporations and similar bodies were compelled to publish full accounts of their interests and activities, the less reputable dealings would not be so numerous. Similarly, publicity would do away with such questionable practices as secret rebates and commissions, which have been characteristic of certain trusts of international repute. It would also discourage the policy of those combinations, one branch of which sells its goods to another branch without making a profit, thus providing an excuse to keep down the wages in its own factories or mines. The report of the Coal Commission of 1925 stated that a fifth of the coal produced in this country was sold by the companies in this way to associated firms.

Others would go a little beyond compulsory publicity, and impose some degree of State supervision and regulation. Different from the earliest critics of monopoly, they would not attempt to curb or retard combination, unless it were flagrantly opposed to the public interests. Thus, the American legislators gradually abandoned their repressive but unsuccessful measures, and adopted a more moderate policy. The Sherman Anti-Trust Act of 1890 being found inadequate, two further Acts were passed in 1914. Under the Federal Trade Commission Act a Commission of five members was given powers to investigate the organization and methods of any corporation and to publish information. It was empowered, further, to issue a complaint against any person who appeared to be violating the anti-trust Acts. If the evidence warranted it, the Commission could order the unfair practice to be abandoned, and, if the methods should still be continued, apply to the higher Courts for enforcement. The Clayton Act, the second of the two statutes, required corporations to conform with certain conditions. It was declared illegal to discriminate in prices if competition was thereby lessened; to compel purchasers to undertake not to buy goods from other firms; to acquire the share capital of another business in order to reduce competition; and for the directorates of different concerns to become interlocked if monopoly appeared to be the object of such action.

Such legislation, however, has been proved to be over-optimistic; where orders have been made by the Commission, they have in many cases been set aside by the Courts. The phrase "unfair methods of competition" has been interpreted very differently by the respective authorities, and the powers of the Federal Trade Commission have been found to be less considerable than was believed when the legislation was passed. The Balfour Committee, commenting in their report on American conditions, state that: "On the whole, the results of the administration of the two Acts appear to have been somewhat discouraging to those who hoped that they would prevent combination. It may be that the existence of the Commission has had a considerable indirect influence in preventing the growth of malpractices and in putting business on a higher moral plane, since numerous cases involving deceptive or dishonest practices have been dealt with by the process of complaint and order. Also the powers of investigation have no doubt been influential. It cannot be denied, however, that only a very partial success has been achieved in preventing the growth of combination or the lessening of competition. The experience of the administration of the Sherman Act between 1890 and 1914 seems to have been repeated. When one form of combination is attacked and declared illegal, the lawyers advising the corporation evolve a new form which, even if an objection by the Commission is eventually upheld, takes a considerable period to be upset."

We have dwelt upon the experience in the United States because in that country monopolistic organizations have made the greatest advance, and legislation for controlling their actions has been most fully tested. In Great Britain there is no legislation for regulating the powers of monopolies in general, or for securing information regarding their activities, although the State exercises some control over public utility undertakings. The Profiteering Acts attempted for a short time to deal with excessive prices and profits (and applied to traders of all kinds rather than to monopolists in particular), but they were allowed to lapse in 1921. In Germany the cartel movement was not discouraged in the years before the War, but when, after the War, prices showed a marked increase, the associations were regarded by the public as partly responsible, and in 1923 a Cartel Court was established with powers of dissolving such contracts affecting supplies and prices as were considered injurious to the general interests. It is significant that in the terms of the Cartel decree no restrictions were imposed on integrations and amalgamations.

PART II

ECONOMIC VALUATION

SECTION 15

VALUE

The problem of value holds the central position in all economic considerations. Subject to certain conditions, value serves as the regulator of production, consumption and distribution. A knowledge of the earlier theories of value is useful, partly for the undoubted elements of truth they contain, and partly in order to appreciate the modern doctrine. The cost of production theory and the labour theory were defective in that they disregarded or underestimated the importance of conditions on the side of demand. Similarly the utility theory in its original form paid insufficient attention to the side of supply. No theory can be satisfactory which does not hold the balance fairly between cost and utility.

VALUATION AND EXCHANGE

The principles of valuation are fundamental to all economic problems. The new-comer to the science may not immediately encounter them if he begins with a survey of the actual mechanism with which wealth is produced. He may examine the several factors that go to make up the economic structure, note the specialization that manifests itself in numerous forms, witness the growth of the industrial unit, and in many other ways become acquainted with the outward appearance of the industrial system. But he soon comes to realize the presence of something deeper in this system than can be discovered by a mere observation of surface conditions, and to realize the central place that value holds in all economic considerations.

The modern world turns on exchange, and in this process value is the basic factor. In the elementary communities of bygone days the division of labour, as we now understand it, was almost non-existent, and people contributed their product to the common wealth without going through any specific act of exchange. The sustenance that they received from the general stock did not always bear a definite relation to their individual additions, but where some connection, however rough, was traceable between effort and reward, to that extent a system of valuation would be employed. As specialization developed, exchange inevitably became more important, for the two are naturally interdependent. One can conceive of a division of labour taking place in very crude conditions, followed not by an intermediate act of exchange, but by direct and common consumption on the part of the producers as a whole. Within the family or other group even at the present time it is possible to find instances of specialization unaccompanied by formal exchange. But, it need hardly be said, most division of labour is undertaken and is made possible only because of the mechanism of exchange that has grown up with it. Specialization normally implies valuation and exchange; exchange without previous specialization would be purposeless.

VALUE AND UTILITY

Early writers on value were more concerned with the ethical than with the economic interpretation. The conception of a "just price" was commonly held in mediaeval and later times, and judgment on its "fairness" was commonly pronounced without regard to factors which were later recognized to be integral parts in the determination. The notion has, in some ways, survived down to comparatively recent times. From the seventeenth century onwards the theory has been put forward in one guise or another, though with varying emphasis, that the value of a commodity is, or ought to be, measured by the amount of labour embodied in its production. Though the labour theory is usually put forward as an economic doctrine, it rests largely on an ethical basis.

Adam Smith and his followers wrote a good deal of the distinction between "value in use" and "value in exchange." The ethical notion was still present, as the opposed terms imply, but it was becoming recognized that the explanation of value was to be sought, partly at any rate, in the "use" of a commodity rather than, or as well as, in the labour cost. The term "intrinsic value" came to have a certain currency, though its limitations soon became evident. It is impossible for a commodity to have a value inherent in itself. Strictly speaking, it cannot even have an inherent utility, for its capacity to satisfy human wants naturally varies with individual consumers and with external circumstances that are seldom constant. If the utility itself is not "intrinsic" in this sense, the idea of an "intrinsic value" is obviously unsound. It was from this confusion that the so-called "paradox of value" arose. Former writers endeavoured to reconcile the high "use value" of certain commodities with their low "exchange value." Actually there was no real paradox at all, but several theories of value had to be formulated, tested, and rejected before the apparent contradiction was explained.

The value of a commodity is at bottom its power of exchange for other commodities. This exchange, of course, is normally effected through the agency of money, the value being expressed as a price. For everyday purposes no material distinction need be drawn between value and price, especially if industrial and monetary conditions are fairly stable. But let there be a change in these conditions and the disparity between value and price becomes immediately evident. For monetary or other reasons, with which we are not concerned at the moment, general prices may show a marked upward or downward trend. Values, however, need not on that account be really affected, for if the general price movement has been uniform, the powers of exchange of the several commodities in terms of each other remain the same as before.

VALUE A REGULATOR OF PRODUCTION, CONSUMPTION, AND DISTRIBUTION

Relative values tend to regulate the different parts of the economic system. The regulation, it is true, is not as automatic or perfect as many former economists believed, and in certain directions is liable to be offset by arbitrary action either of the State or of large private bodies. The influence is most noticeable on production and consumption. Value serves as an indicator both to producers and to consumers, informing them of the state of the market, of variations in requirements and supplies. Thus a rise in the value of a commodity is interpreted by growers or manufacturers as a sign of an approaching, if not imminent, shortage, relative to the demand. Either the quantity of that commodity placed upon the market has diminished, or, despite a possible increase, it has been overtaken by the demand. Producers therefore take the necessary steps to increase the supply. A fall in price, on the other hand, may bring about the opposite result. If the lower price is the result of improved technique or management, supplies may continue to increase, and, so long as the demand continues to be sufficient to absorb the output, the apparent loss on the selling price of each unit may be more than counterbalanced by the economies of large-scale production. But if the lower price is due to an over-supply of the commodity, relative to the demand, the producers as a whole begin to restrict their output and continue that policy until supply and demand are more evenly balanced.

Consumers, too, adjust their actions according to the price of the commodity they require. If prices are high, usually indicating a shortage, people do not, if they can help it, buy in the accustomed quantity, with the result that the stocks are not used up as rapidly, and may last out until the producers, under the impetus of the high prices, are able to swell the total supply. Conversely, if prices are low, consumption is stimulated. Should the fall in price be due to a glut on the market, the increased consumption is likely to remedy the position.

The principles of value apply also, though not in the same manner or degree, to the distribution of the social product in the several forms of income. Wages, profits, interest and rent are in a sense the values placed upon the contributions of the respective agents of production, and up to a point these values tend to be determined on the same general lines. In certain branches of distribution, however, arbitrary conditions abound. Wages in many trades are subject to State regulation, or to the decisions reached by workpeople's and employers' organizations, while the rates in the "free" industries, which are in the minority, are indirectly affected too. The rates fixed for unemployment insurance benefit or public relief naturally influence the lower levels of wages. The incomes of non-wage-earners are not so directly subject to this form of intervention, though they are naturally determined in part by those rates that are more or less arbitrarily determined for the remuneration of labour. With all these qualifications, however, the same basic laws tend to operate, and a study of valuation in general is a necessary preliminary to that of the apportionment of incomes.

EARLY THEORIES OF VALUE

It is a commonplace that value is determined by "supply and demand." To most people such a statement conveys all they require to know about the forces of valuation. Let the supply decline relative to the demand, and prices will rise; let the demand decline relative to the supply, and prices will fall. Such truisms, however, do not carry us very far. "Supply" comprises a host of circumstances, which, the more they are examined, are found to be the more complex. Similarly, "demand" is found to represent a set of intricate conditions which the casual interpretation of the term would altogether ignore.

If the problem of valuation were so easy as to be capable of reduction to the simple formula of supply and demand, it would not have puzzled the brains of economists from the earliest days of the science, and it would not, even now, give rise to controversy. The theory of value has been in the forefront of economic thought at almost all times since the days of the Physiocrats and Adam Smith. John Stuart Mill, in the middle of the nineteenth century, believed that the theory had reached the stage of finality, but within a few years discussion was revived and the doctrine, which appeared so perfect to Mill, underwent considerable modification. The theory that had been developed by the classical school was to a large extent abandoned. Or, as some would prefer to put it, less emphasis was placed upon those factors which Smith and Ricardo had believed to be the chief causes of value, and more emphasis was given to those factors which these writers had either ignored or under-estimated. It is not merely of academic interest to study the earlier theories. To say that they were superseded is not to imply that they were altogether false. There was undoubtedly much that was sound in the doctrines of the classical school, and although, in the enthusiasm of the reaction, the truths were for the time being apt to be overlooked or underrated, they came eventually to be incorporated in a better-balanced theory of value than had been submitted before.

COST THEORIES OF VALUE

Adam Smith believed that "the real price of everything is the toil and trouble of acquiring it." Ricardo dealt with the problem at greater length, and stated in his *Principles*

(1817) that, "in the early stages of society . . . . the value of a commodity, or the quantity of a commodity for which it will exchange, depends on the relative quantity of labour which is necessary for its production." Later in his work, he went on to show that, as society developed, instruments of production became increasingly necessary and that due allowance for these must be made in a computation of costs. He also took into account the length of time that must elapse before the producer receives payment for his goods, thus introducing another item into the total costs of production.

Hence it is more correct to describe Ricardo's doctrine as a cost of production rather than a labour theory of value. It is characteristic of the classical school that they attempted to explain all values, of services as well as of tangible goods, from the side of supply, paying insufficient attention to considerations of demand. Not that Ricardo altogether ignored the importance of utility. He recognized that utility was an essential attribute of everything possessing value, but did not admit that it could be a direct determinant or measure of value.

Fifty years after the publication of Ricardo's *Principles*, Karl Marx produced the first volume of his *Capital*, which came to exercise a considerable influence on socialist thought. Marx (besides Rodbertus, William Thomson and other writers) maintained that labour was the source of all value, but that the labourer did not get all that he produced. Labour was said to produce a "surplus," as Marx described it, over and above what it was paid in wages and what had to be allowed for wear and tear of capital. This surplus value accumulated in the hands of capitalists and property owners, while the labourers received little more than was necessary to keep them in a state of efficiency.

Though there are important differences between the cost of production and the labour theories of value, especially as regards their practical implications, they may, for our present purposes, be considered together, for they both attempt to explain value from the side of production. And, in so far as the provision of capital and the undertaking of risks can be reduced to terms of human effort, the two theories are on common ground and open to the same criticism.

Criticisms of Cost Theories

The outstanding criticism directed against both cost theories is that they under-rate the part played by demand. Ricardo, we have observed, recognized the importance of utility, but could not perceive its direct bearing on value. Marx, too, admitted that utility was an essential attribute of anything possessing value, but, since utility varied so much with different people and at different times and places, he could not accept it as a governing factor in itself. It was left to later economists to show that utility, in spite of its variability, was no less important than cost in the determination of value.

Considerations of supply alone do not account for the comparatively low value of those commodities which turn out to be in excess of the consumers' requirements, or, perhaps, not to be required at all. A manufacturer may have made a mistake in forecasting the demand. Possibly a change in fashion, or in general conditions, has caused such a restriction of the market that the price measures but a fraction of the original costs of production. Attempts to explain the low values of such goods on the ground that the labour was misdirected, or that it was not "socially necessary," only point to the deficiencies of a pure cost theory. Indeed, the stipulation that the labour must be "socially necessary" is virtually an admission that utility plays some part in the fixing of value.

The value of a commodity may alter long after the processes of production have been completed. A fall in price due to depreciation in quality is understandable, but it cannot be explained on grounds of production costs alone. A motor-car may cost £500 new. Let the purchaser after a few weeks' use of it try to sell it, and he will be fortunate if he gets £400, despite the fact that the car may now be in a better running condition than when he bought it. Or, if a new car happens to remain in stock after the end of the summer season, it is sold as "shop-soiled" at an appreciable reduction, even though the new season's models, selling at the higher price, may be little different, if at all, in specifications, and involve a no greater outlay in cost of production. Obviously, factors other than cost must be taken into consideration in explaining the relative values.

Or the value of a commodity may go up instead of down, irrespective of conditions of cost. Where the supply of an article in great demand cannot be quickly increased, the price is likely to soar. Durable goods may undergo fluctuations in value that bear little relation to their original cost of production. In the values placed upon old masters, first editions, rare stamps, and so on, there is no question of production costs playing any part at all.

A difficulty attaching to the labour theory of value in particular is that of fixing the unit of measurement. How, for example, should one compare the efforts of a surgeon and an agricultural labourer? They both render indispensable services, yet an hour of the one involves a greater expenditure of energy than an hour of the other. Marx soon gave up the idea of adopting labour time as the basis of measurement. But he was no more successful when he chose as the criterion "unskilled" labour, or "average" labour, or "socially necessary" labour, or "simple abstract" labour. Robert Owen, several years before, had been imbued with similar ideas, and had attempted to put them into practice. In accordance with his belief that "the natural standard of value is, in principle, human labour," Owen established in 1832 the Equitable Banks of Exchange. The medium of exchange was not money, as usually understood, which he held to be responsible for most social ills, but labour-notes. His banks were to be labour-exchanges in the true sense of the word. Ordinary sale and purchase were not to be practised. Goods of all kinds were to be taken in and handed out, the respective values being estimated on an average of 6d. per hour. But the scheme did not fit in with the realities of the economic system, and soon disappeared.

Finally, just as the utility of a commodity is subject to variation, so the cost of production, or the total amount of labour, is liable to be different as between one firm and another. It is liable also to vary, for the same firm, from one time to another, though the price of the goods remains unaltered. The statement, therefore, that value is determined by cost of production, or the quantity of labour, was incomplete, even on the supply side; and it was not until much later that the variability of costs was given a satisfactory place in the general theory.

Ricardo and his followers over-emphasized the relation between value and cost of production. Their critics went to the other extreme, and laid too much stress on the relation between value and utility. Thus Jevons asserted (1871) that "value depends entirely upon utility," that "labour is found often to determine value, but only in an indirect manner, by varying the degree of utility of the commodity through an increase or limitation of the supply." Jevons made some notable contributions to economic science, especially on "the degree of utility" and its bearing on valuation. The marginal theory of value, which to-day commands a wide though not universal acceptance, is to a large extent based on the reasoning contained in Jevons's works. This theory will be developed and applied in the following sections.

SECTION 16

VARIABLE DEMAND

PRACTICALLY all forms of consumption conform to the law of diminishing utility. The use of money is no exception to the general rule. The law is of practical significance in the matter of redistribution of income and graduated taxation. The elasticity of demand is one of the most important conditions in the determination of value. It has to be taken into account by manufacturers in fixing their prices and by governments in imposing taxes. There is an elasticity of supply corresponding to that of demand, but the time element is responsible for certain differences. The elasticity of demand for a commodity depends on the degree of necessity, on habit, on the extent to which the commodity enters into consumption, on its durability, and on the presence of substitutes.

THE LAW OF DIMINISHING UTILITY

THE more we have of a thing the less we appreciate it. This trite remark of everyday life has been expanded and developed into one of the central theories of economic science. The law of diminishing utility, as it is technically known, was at first limited to a simple statement of conditions governing consumption, but by stages it came to be intimately bound up with the fundamental laws of valuation.

Examples of diminishing utility are not far to seek. We can hardly find any commodity the consumption of which does not, sooner or later, conform to the law. The consumption of foodstuffs presents the most evident instance of satiable wants. The first sandwich, let us say, gives a high utility, but it takes the edge off one's appetite. The second sandwich also has a high utility, but not as a rule to the same extent as the first. The third sandwich has a still smaller utility, and so on. The utility that the consumer derives from the several sandwiches increases, but not in the same proportion as the number itself. Two sandwiches will not yield twice the utility of one. The aggregate utility, in other words, increases in a smaller ratio than the number of units from which it is derived.

Thus our opening statement already requires some modification. It is not strictly correct to say that the more we have of a thing the less we appreciate it. It would be nearer the truth to say that the more we have of a thing the less we appreciate successive increments of it. The utility of each additional unit diminishes, but the utility of the whole increases.

Consumption of successive units may be carried so far that disutility takes the place of utility, and in such cases the total utility diminishes too. Disutility is comparatively rare and is experienced only when the commodities are free goods or when money is injudiciously expended. When blackberries are growing in such profusion that one is tempted to indulge in them too liberally, disutility may easily result. Where the commodity is an article of exchange, possessing a money value, its consumption can give rise to disutility only when the purchaser has acted in an uneconomic manner. That exchanges of these kinds do take place is not denied, but they are not normal. A man will exchange a thing of relatively low utility (to him) for one of high utility. This is the usual occurrence. But he will not, as a general rule, exchange a thing of high utility for one of low utility.

It might at first appear that, if a man benefits from the exchange of a high for a low utility, the other party must necessarily suffer in corresponding degree. But this submission is not valid, for, as was implied above, the same commodity may have a low utility to one person, yet a high utility to another. If A, who would like a bicycle for his birthday, is given a wireless set, and B, who would like a wireless set, is given a bicycle, exchange of the two articles is likely to prove of mutual advantage. The same example may be extended. A may have been the possessor of a cycle before the gift of the second one. He derives a high utility from the first cycle but considerably less from the second, even though there is nothing to choose between the machines themselves. B may be in a similar position with regard to radio sets. If they had only one each of their respective properties there would be no occasion for exchange. But the acquisition of a second unit on each side causes a less than proportionate increase in the total utility and prompts the desire for a suitable exchange.

The fallacy that if one party gains from an exchange the other must necessarily lose at least to the same degree used to be very common. Our foreign trade policy in the days of the Tudors and Stuarts was in some ways influenced by this idea. The country was urged to secure the "balance of bargain" in its trade with other nations, and commercial policies were accordingly devised. It was not until the economists of later times had exposed this fallacy that the restrictions which had been fettering foreign trade were largely removed. In the meantime practical affairs were influenced by a false economic doctrine, which sprang from the failure to recognize that exchange may be, and usually is, to the mutual advantage of the two parties.

Apparent Exceptions to Diminishing Utility

Seeming exceptions to the rule of diminishing utility are to be found in those commodities of which it may truly be said that "appetite comes with eating." A person who eats an oyster for the first time may not derive any appreciable enjoyment; but as his palate becomes more accustomed to the fare the utility of successive oysters may increase rather than diminish. A man who has never before tasted alcoholic beverages may gain a greater satisfaction from the third glass of wine than from the first. Similarly, a taste for literature or music is not acquired in a day, but may increase as time goes on. The fifth reading of a poem or hearing of a sonata may give more pleasure than the first. Numerous examples of this kind are to be found, but they do not disprove the truth of the law, if it is confined, as it should be, to conditions in a short period of time. The law refers only to circumstances in which the units are consumed in immediate succession. The second sandwich, if kept until some hours later (provided that it is still fresh), will possibly give as much utility as did the first. The utilities from oysters and wine, poetry and music may increase under the above conditions, but consumption takes place at different times and, moreover, at different stages in the consumer's capacity for appreciation.

Where a number of articles are required to make up a whole, increasing utility might seem, on casual examination, to be possessed by the component items. For example, if a man has lost one of a pair of gloves, he might value the remaining glove at 6d. only, yet be prepared to give 5s. for the recovery of the other. A missing piece of a set of china or chessmen may be valued out of all proportion to the utility of the other pieces regarded collectively, and may be purchased at a correspondingly higher price. It should be understood, however, that the law refers only to complete units and not to constituent parts. A pair of gloves admittedly gives more than twice the satisfaction than an odd glove, but it is the pair, and not the single glove, that is the unit of comparison. A second pair of gloves gives a smaller utility than the first pair. Two sets of china do not give the owner as much as twice the utility of one set. And no matter how enthusiastic a chess player may be, he will not derive twice the satisfaction from two sets of pieces as from one.

The law of diminishing utility, then, applies only to conditions in a short space of time, during which external circumstances and the nature of the consumer remain unaltered. Little exception can be taken to the general statement that the aggregate utility from the consumption of goods increases up to a point, but at a slower rate than the actual quantity of the goods.

Application to Money and Income

It is important to realize that the law of diminishing utility applies to money as well as to ordinary goods. Money may be a commodity of which most people cannot have too much, but the satisfactions from successive units of expenditure obey the tendency to diminish. When a man's income is very small he spends it on those commodities for which he has the greatest intensity of need. There are other articles which he would like, but not in the same degree. If his income increases he may still buy more of the essential commodities. If the most urgent needs, however, have been satisfied, and an appreciable falling-off in utility is expected from further consumption of the necessaries, he may find it to his advantage to purchase those articles which formerly were of smaller utility but which now, in comparison with the further units of the first commodity, have a greater utility. Thus a man who has £2 10s. 0d. per week spends the money on the necessary food, clothing and shelter for himself and his family. If he now receives £3 per week, he will probably purchase some of the minor comforts of life such as tobacco or periodicals, which, though formerly desired, have not the same degree of utility as the goods bought with the first £2 10s. 0d. It is true that there are certain stages in the progress of one's income when increasing rather than diminishing utility would appear to be experienced. For example, a small jump in salary which permits of a larger house or a longer holiday might be taken to yield a proportionately greater satisfaction. But if we regard the range of income as a whole there is no doubt of the tendency for utility to diminish.

ELASTICITY OF DEMAND

It is a matter of common experience that a rise in price tends to be followed by a contraction of demand, and that a fall in price tends to encourage an expansion of demand. Smaller or larger purchases, however, may occur for reasons other than variations in the price. A thing may become fashionable or unfashionable, and the price be adjusted accordingly. The price may be raised yet the demand still increase; or the price may be lowered yet the demand continue to drop. Again, a slight rise in price may be interpreted as the prelude to a further increase, and consumers who can afford to do so may lay in stocks in anticipation of the still higher prices. Conversely, a fall in price may be interpreted as a sign that prices are going to drop even further, and buyers, unless they are in urgent need of the goods, may hold off their demand until the lower level of prices is reached. For such reasons it is not strictly correct to maintain that price and demand always vary in inverse directions.

The variability of demand in relation to price is commonly spoken of as its elasticity. Demand is said to be elastic when a change in price, whether upward or downward, causes an appreciable change in the demand. It is said to be inelastic when a change in price has an inappreciable effect upon the demand. Absolute inelasticity is very rare, if it exists at all. There are, it is true, a few commodities, such as bread and salt, the demand for which remains fairly constant in spite of fluctuations in the price. But it is reasonable to suppose that, if the price rose to a higher level than is customary in this country, the demand would to some extent contract. In certain foreign countries where there is a tax on salt, and where, therefore, the price is higher, the demand is found to be more sensitive to alterations in price. When we speak of elasticity or inelasticity, we use the terms only in a relative sense. Thus, to describe the demand for sugar as inelastic does not imply that the consumers' requirements are rigidly fixed at a certain quantity irrespective of the price. It merely denotes that the demand for sugar is relatively constant as compared with that for other goods.

It should be noted, too, that as certain commodities may be used for a number of purposes, they may possess varying degrees of elasticity according to the particular uses for which they are required. An individual demand may be inelastic, yet the demand as a whole fairly elastic. Leather, for example, is in more urgent demand for making boots than for use in furnishing. Though substitutes are employed for both purposes, they are less common in footwear than in upholstery. A rise in the price of leather is more likely, therefore, to cause a shrinkage in the demand in the second industry than in the first. Hence, in referring to the degree of elasticity of the demand for a commodity, it is often necessary to specify which of its particular purposes is under consideration; otherwise a misleading impression of the elasticity of the demand as a whole may be conveyed.

Practical Importance of Elasticity of Demand

No sensible trader will raise the prices of his wares without looking to the possible reactions on demand. The manufacturer in particular will be reluctant to put up his prices, if the reduced demand, and corresponding supply, results in an increase in his unit costs of production. On the other hand, a reduction in the price, coupled with a large increase in the demand and supply, may effect such economies in the costs of production as to more than compensate for the drop in the selling price. A newspaper is reduced in price from twopence to one penny, and its circulation is increased enormously as a result. The overhead charges are distributed over a larger output, and, more important perhaps, the advertisement revenue multiplies. The price policy so far is justified. But the owners will hesitate to reduce the price further to one halfpenny. The demand between two pence and one penny is elastic; below one penny it is comparatively inelastic. As already implied, the degree of elasticity of demand for a commodity is not the same throughout the whole range of possible prices. The lower the price the more inelastic, as a rule, does the demand become.

A government, too, must pay regard to the sensitiveness of demand in fixing the charges for public services or the taxes on commodities. When the price of carrying a letter was reduced after the War from twopence to three-halfpence, i.e. a drop of 25 per cent, the resultant increase in the number of letters posted was estimated to be only 5 per cent. As the Post Office services are conducted on a commercial basis, there is naturally a reluctance to return to the pre-War charge of one penny per letter. Similarly, in regard to the customs and excise duties, the Chancellor of the Exchequer would hesitate to impose or increase taxation on those goods for which the consumers had a very elastic demand. He may in fact adopt the opposite policy, for instances are known (e.g. the cigar duty) in which a reduction of the tax led to such an increase in the demand that the lower rates of taxation brought in a larger aggregate of revenue.

Factors Governing Elasticity of Demand

The chief factors influencing the elasticity of demand may be briefly noted. The most obvious consideration is the degree of necessity which a commodity possesses. A thing that is essential to existence is likely to have a more inelastic demand than one which is a conventional necessary or a luxury. It is broadly true that, the more indispensable is a commodity, the less responsive is the demand to changes in price. It does not follow, however, that all luxury articles have an elastic demand. Everything depends upon the particular class of luxury and upon the income of the consumers. A very rich person will not forgo buying a desired article, even though the price has gone up considerably. It is doubtful whether a rise or fall of £50 in the price of the most expensive limousines has a marked effect upon the demand. Certain luxuries are in the singular position that they are in great demand only so long as they are highly priced. A few acquire them not so much for their specific qualities as for the sense of pride and exclusiveness to be derived from their possession. If diamonds were as cheap as glass the desire for them would not be nearly so great as it is. Many women aspire to the ownership of rare and expensive jewels, but, once their vanity is appeased, are content with placing them in safe deposit and with wearing imitations for the world to see. In most ranges of income, however, especially those which are just sufficient to provide luxuries as well as necessaries (according to the accepted standards of the respective classes), the demand for luxuries shows a high degree of elasticity.

Secondly, and to some extent bound up with the first consideration, is the influence of habit. A commodity in the early days of its sale may have an elastic and uncertain demand. A rise in its price at this stage may result in its disappearance from the market. But, once people become habituated to its use, the sellers, especially if they possess a monopoly, may put up the price and suffer but a small shrinkage in the demand. Not many years ago the inclusion of a bathroom in a house was regarded as a luxury, and the demand was very limited. Now that its desirability has come to be widely recognized, the price might vary between fairly wide limits, yet the demand be little affected. It is not so much because people are better off than they used to be, or because they can regard a rise in price with equanimity. It is simply that the bathroom has come to be included among the conventional necessaries of life. Should the price of baths moderately rise, the majority of prospective purchasers would still acquire them and economize in other directions.

Thirdly, the elasticity of the demand depends upon the extent to which the commodity enters into a person's budget. The larger the proportion that it takes up, the greater as a rule will be the elasticity of the demand. We mentioned salt as a commodity for which the demand is inelastic. The reason is not only that salt is indispensable or that it is cheap, but also that the weekly outlay upon it bears a very small relation to the total expenditure. Even if it were not necessary to existence, the place it occupies in the family budget is so small that variations in its price would cause but slight alteration in the demand. Pepper, for example, is not essential to life, but it is used in such small amounts that a rise in its price would have a negligible effect on the quantity consumed. A necessary like meat, however, accounts for such a large item in the weekly expenditure that the demand is apt to be elastic. Thus a commodity may not be a necessary, but if consumed in small quantities may be subject to an inelastic demand, while a commodity which is essential to a decent standard of living, but whose cost bears a large ratio to the total expenditure, may perforce be subject to an elastic demand.

The elasticity of demand is also governed to a certain extent by the durability of the commodity. Some articles are consumed very quickly. Their consumption cannot be spread over a longer period in the event of a rise in price. Other commodities are not so quickly perishable. If they cost little they may be discarded long before they are worn out, but if they are expensive they are likely to be more completely utilized. A felt hat, for example, which costs five shillings, may be thrown away after a few months' wear, but if the price should go up to ten shillings the owner may decide to keep it for a year, and possibly send it to the cleaners so as to give it a new lease of life.

Finally, there is the important consideration of substitutes. The easier it is to find alternative means of satisfying one's wants, the more elastic is the demand. The price of butter cannot be raised to any serious degree without causing part of the demand to be diverted to margarine. A rise in the price of artificial silk goods is liable to transfer some of the demand to cotton products. The demand for music-hall entertainment is elastic at any time, but it is rendered even more so by the advent of the cinema. Innumerable examples of this kind are to be found. Indeed, the number of commodities for which there are no substitutes in one form or another is distinctly limited. Modern science and the constant search for new resources are ever increasing the variety of goods upon the market, thus tending to make the variability of the demand for particular products more sensitive than ever before.

Relation to Elasticity of Supply

Though we are primarily concerned for the moment with conditions of demand, it is relevant to consider in this connection the relationship to the elasticity of supply. The newspaper owners in the previous example would not have lowered their price had they not been in a position to cope with the greater demand. The Post Office was prepared to increase its services following a reduction in the letter rates. But it is not always possible to augment the supply of a commodity at short notice. The production of a newspaper, for example, is a very complicated affair, necessitating a considerable amount of specialized capital. If the newspaper organization were already working to full capacity, the owners would not decide upon the lower price until all the necessary arrangements had been made to provide for the wider market.

The time factor influences the elasticity of demand and that of supply in different ways. Though demand is undeniably subject to many forces that vary from day to day, and may increase or diminish for reasons wholly unconnected with the prices that are charged, it is safe to say that its degree of elasticity will not, as a general rule, change very much from the short to the long period. We can attribute to a commodity a certain degree of elasticity of demand without specifying the length of time. But conditions of supply in the short run may differ considerably from those in the long run. Though supply may increase in the course of time in response to better prices, it may remain unaltered for weeks or even months. There are certain articles, of course, the supply of which is practically constant (more so than demand can be), such as first folios of Shakespeare or portraits by Gainsborough. Such commodities are admittedly exceptional. But even ordinary goods that are capable of being supplied in almost unlimited quantity, provided that adequate time is allowed, may be equally inelastic in supply during a short period. If the existing plant is already being worked to the full, considerable delay may be occasioned before augmented stocks can be placed upon the market. If, however, the price goes down, it may not be an easy matter to effect an immediate restriction of output, and prices may drop still further. The inelasticity of the supply of perishable goods in the short period is particularly marked.

The seller of such commodities must dispose of his stocks within a short time, whatever the price. Hence the elasticity of supply is subject to somewhat different conditions from those determining the elasticity of demand, and an expansion or contraction in the one is not necessarily accompanied at the time by a corresponding reaction in the other.

convenience

SECTION 17

UTILITY AND PRICE

The price of a commodity tends to approximate to the marginal utility as expressed in money. Under conditions of competition, which implies perfect knowledge of consumers as well as producers, people tend to lay out their income in such a way that the marginal utilities of all the goods purchased are equal. The conception of consumer's surplus arises from the marginal theory, but, like the theory itself, has been subjected to certain criticism.

MARGINAL UTILITY

UTILITY, we have seen, is the central factor in demand, and has an important bearing upon price. The relationship between utility and price, however, is not a simple one. Under competitive conditions we all pay the same price for a certain commodity, but do not obtain from it the same utility. We may buy a number of units of that commodity for our own consumption, but do not obtain an equal utility from each unit. To say therefore that the price of a commodity is influenced by its utility is insufficient. The statement is not incorrect, but it does not give the whole truth. Before we can trace the real connection it is necessary to examine utility a little more closely.

We have shown that the utility of units successively consumed tends to diminish. The first unit gives a comparatively high degree of utility, the second unit a smaller utility, and so on. If the consumption is carried far enough the additional utility may sink to nil, or may be converted into a disutility. Where goods are freely obtained the consumption may easily be continued until no more satisfaction can be derived. But where the goods have to be paid for, the consumer usually ceases to purchase long before the stage of complete satiety is reached. We thus observe the first point of connection between utility and price. If the price is high the consumer will stop acquiring additional units at a comparatively early stage. Perhaps he will not find it practicable to purchase even the first unit. If the price is low he will go on buying successive units, even though the additional utility so obtained becomes less and less. The position of the price determines the point at which the consumer stops acquiring further units. The utility of the last unit purchased at a particular price is known as the *marginal utility.*

Marginal utility does not necessarily imply a low degree of satisfaction. Only where the price is so small that consumption is carried to an extreme stage is the marginal utility likely to be a small quantity. If the price is high the consumer may have to be content with a few units, perhaps only one. For example, a house may cost £1,000, and a man may consider the utility to be sufficient to warrant this heavy outlay. A second house, however, would represent to him a much lower utility, and, after buying the first house, he usually prefers to spend his remaining money on other objects which yield a greater satisfaction.

Marginal Utility and Price

Since the level of the price determines the margin, it follows that marginal utility is by no means fixed. As the price goes up or down, the position of the margin is altered accordingly. It is meaningless to speak of a margin without reference to the prevailing price. The statement which one occasionally comes across that marginal utility "fixes" the price is misleading in that it is likely to give the impression that marginal utility is itself the determining factor. The position of the margin is determined by, as much as it determines, the price of a commodity.

It is necessary to distinguish between the marginal utility of a commodity when successive units are consumed for satisfying the same wants, and the marginal use when the several units are employed for various purposes. For example, a second glassful of milk drunk immediately after the first will not as a rule yield the same utility, and if the price per glass is 1½d. the marginal utility is said to be possessed by that glassful which is considered just worth while buying at that price. The housewife, however, uses milk for a variety of purposes. If the price is 6d. per quart, she will not perhaps use it so plentifully in baking as she would if it were 5d. per quart. The lower the price, the lower the marginal use to which the milk is put.

To take another example, when the price of petrol was 4s. per gallon a doctor might have used his car almost exclusively on his professional round, but when the price fell to 2s. he might have used the car more frequently on pleasure runs. And, when the price fell further to 1s. 0d., the womenfolk of his household might have used the spirit for cleaning fabrics and other domestic purposes. The marginal use of the petrol would be determined entirely by the price. It is employed in America, where it sells very cheaply, for an inferior range of uses than on the Continent, where the price is much higher.

Also, as the price falls, the commodity becomes available for a larger number of consumers. Just as there is a marginal point in the consumption of successive units by a single purchaser, so there is a marginal purchaser in the range of consumers. He is the one who is just induced to enter the market. If the price were a little higher, he would refrain from buying; if it fell a little further, he might buy additional units, while another purchaser would be found at the new margin. This is but a more precise way of stating the commonplace fact that when the price falls the demand goes up. It goes up, partly because existing purchasers increase their present consumption, in one or other of the ways described above, and partly because new consumers enter the field.

It is important to realize that, if free competition prevails, the price of a given commodity cannot vary as from one use to another or as from one person to another. Whether petrol of a particular brand is used by a surgeon engaged on urgent work or by a youthful motor-cyclist on a week-end jaunt, the price is the same for either consumer. Whether milk is used for drinking or for making cakes the same price has to be paid. No matter to what purpose a commodity is put, or by what class of person, wealthy or otherwise, it is purchased, there cannot under conditions of competition be any discrimination in the price.

The conclusions that we have reached so far may be briefly re-stated. Different units of an identical commodity give varying degrees of utility either to the same person or to different consumers. They must all, however, under competition sell for the same price. The actual price, the determination of which we have still to consider, decides the position of the margin. At this point the marginal utility, as measured in money, and the price are equal. No matter whether the price goes up or down, the position of the margin is automatically adjusted to the new level. Certain units of a commodity may possess a utility considerably greater than that measured by the price, but it is obviously impossible to discriminate between the several degrees of satisfaction and to charge accordingly. It is the money measure of the marginal utility, not the total utility, to which the price approximates.

EQUI-MARGINAL UTILITY

For the present we continue to assume the existence o competition. This state of affairs is admittedly not typical of actual conditions, but it makes for simplicity if, to begin with, we postulate perfect knowledge and mobility. Later on we can make such modifications in the general theory as the prevailing conditions of demand and supply may require.

Free competition implies effective rivalry not only between sellers but also between buyers. Furthermore, it implies that every buyer spends his money in such a way that it yields him the greatest advantage. The commodities which he requires compete, as it were, for his favour, and the perfectly informed consumer (who in real life is very rare) chooses among them, and buys in just those proportions, so that the marginal utilities derived from all of them are equal.

This deduction naturally follows from the theory which we have already formulated. A person buys a wide variety of goods, each of them possessing a certain utility. He first selects those articles which are essential for existence, and which possess a high total utility. When the edge of his appetite for these commodities has been taken off, or, in other words, when the utility from successive increments has begun appreciably to diminish, he considers that his remaining money will be more advantageously employed if spent on other goods, which did not at the outset make the same appeal, but which are now relatively more attractive. And so he proceeds to lay out his income until the whole of it is put to some use. This does not, of course, preclude saving. He may estimate that putting so much aside out of current income yields a benefit that is comparable to the satisfaction that is obtained from direct expenditure. The amounts that are set aside, and the utilities that they represent, vary from one person to another according to his special needs and circumstances.

Obviously, a wise purchaser will not buy one commodity when the same sum of money spent upon another will yield a higher degree of utility. He will transfer his attention to the new article only when he expects to receive from it at least the same utility as from a further unit of the first commodity. He may find eventually that articles of the luxury kind, whose total utility to him compared with that of necessary articles is very small, are well worth purchasing. The more urgent desires for the essential goods having been fulfilled, the satisfaction to be derived from further consumption of them may be smaller than is anticipated from the consumption of the less necessary commodities.

It needs little demonstration to prove that a given income obtains the maximum satisfaction when the marginal utilities of all the articles purchased are equal. It is a simple matter to draw up a schedule representing the marginal and total utilities to be derived from different items in one's budget. For example, a labourer with 45s. per week might spend 9s. on rent (including rates) and 36s. on food and clothing (leaving out, for the sake of clearness, the miscellaneous small items), or 10s. on rent and 35s. on food and clothing, or 11s. on rent and 34s. on food and clothing. If he spent according to the first plan he might find (supposing that he could accurately assess the respective utilities) that the last shilling spent on food and clothing gave him a smaller utility than the last shilling spent on rent. If he spent according to the third plan he might find that the last shilling spent on food and clothing gave him a greater utility than the last shilling spent on rent. If he adopted the middle course he might experience equal satisfactions from the last shilling spent on either group of items. This, of course, is a very rough example, and does not pretend to be a correct statement of real conditions, but it will suffice perhaps to illustrate the general principle.

In choosing between the several forms of expenditure the labourer has been acting in accordance with *the principle of substitution*, which, as will be evident as we proceed, governs many other kinds of economic activity. It is sometimes described as *the law of indifference.* As the marginal point is approached the consumer finds it almost a matter of indifference whether he buys a little more or less of one commodity or another. At this point, though it may not always be determinable in practice, an exact equilibrium of marginal satisfactions is attained.

CONSUMER'S SURPLUS

The conceptions of total utility and marginal utility give rise to the further notion of consumer's surplus. The fact that a person is prepared to pay a higher price for some of the units of a commodity than is indicated by the marginal unit leaves him with a surplus of satisfaction, so to speak, after he has parted with his money. This surplus represents the difference between the price which the purchaser would be prepared to pay, if necessary, for all the units less the price that he is actually required to pay.

For example, a keen smoker, rather than forgo the pleasure of a cigar, would be willing to pay 1s. 6d. For a second cigar he would be prepared to pay 1s. 3d. On a third cigar he would place an estimate of 1s., and on a fourth 9d. A fifth would represent a utility to him of 6d., but if the actual price is 9d. he does not go beyond the fourth. The marginal utility, measured in money, is 9d., and he pays for the four cigars 4 × 9d., i.e. 3s. The total utility of the four cigars is 1s. 6d. + 1s. 3d. + 1s. + 9d., i.e. 4s. 6d. His consumer's surplus therefore is 1s. 6d. To maintain that the smoker would be prepared to pay on the average 1s. 1½d. per cigar (i.e. 4s. 6d. for the four) rather than not buy the same quantity, and that the price should be adjusted accordingly, would miss the point. It is the marginal utility, not the average utility, which indicates the price. If the price were 1s. 1½d. the smoker would, according to the above schedule, buy two cigars only, the respective utilities being 1s. 6d. and 1s. 3d. To purchase more would mean parting with money with a relatively high utility for additional goods with a relatively low utility. In any case, it would in practice be quite impossible for a seller to gauge the utilities of each unit purchased by each one of his customers and to calculate his prices on that basis.

General Criticism of Marginal Method

The conception of a consumer's surplus has been criticized on the ground that it is very indeterminate. Some commodities are attributed with a high utility only so long as they fetch a high price. We have previously had occasion to mention the curious case of jewellery which is esteemed by the owner largely because it is known to have a high market value. A drop in the price of such articles, instead of increasing the consumer's surplus, might cause it to vanish altogether. It is indisputable that the purchase of necessaries of life yields a higher consumer's surplus than does the purchase of comparative luxuries. But even here the nature and extent of the surplus may be very uncertain; and to employ the doctrine, as some have suggested, as a basis of differential taxation, with the object of appropriating part or whole of the surplus, presupposes a greater knowledge of consumption than we possess. Total utility cannot be translated into terms of money so readily as the theory would imply. Nor have we the means of measuring with any accuracy the utilities of successive units in the range of consumption. Some economists, in fact, criticize the marginal theory in general for this same reason. They contend, further, that, even if the successive units of satisfaction could be measured, the method of reasoning would apply only to small increments in the stock. A marginal house or motor-car is more difficult to conceive than a marginal chair or pint of oil. The critics also question the supposed ease of substitution and the automatic adjustment of units of expenditure to units of utility.

The exponents of the marginal methods, however, do not claim that their theory, at any rate in its present stage, offers a complete explanation of the forces determining value. Marshall, who did more than anybody else to develop the modern doctrine, dissociated himself from the contention that the marginal use of a thing "governed" the value of the whole. Rather, he stated, "we must *go to the margin to study the action of those forces which govern* the value of the whole, and that is a different affair" (*Principles*, V, viii, 5). The conditions at the margin are effects as much as causes. The same forces are in operation above and below the margin, but it is at the fringe that they are mainly in evidence. From our observation of phenomena at the marginal point we can draw conclusions as to the conditions throughout the whole economic scale. Properly used, and with due regard to its limitations, the method can be of great assistance in unravelling many problems that perplexed the economists of earlier generations.

SECTION 18

VARIABLE COSTS

"COST of production" is an ambiguous phrase, and needs careful definition. The distinction between "prime" and "supplementary" costs is of practical as well as of theoretical importance. Price tends to equal the marginal cost of production. The producer tends to organize and arrange the factors of production in such a way as to obtain equi-marginal returns from each.

COST OF PRODUCTION

IN the foregoing discussions we have been mainly concerned with variations in demand, and have paid but slight attention to variations in supply. Marginal utility, we have shown, is the main factor in the determination of value from the side of the consumer. The theory, however, would be very incomplete and misleading if we left off with the conclusion that price tends to approximate to the money measure of marginal utility. In the ensuing pages it will be shown that a no less important force in the determination of price is exercised on the side of supply by marginal cost of production. In doing so, we shall cease to regard supply as fixed, and attribute it with the flexibility which it possesses in economic life.

A preliminary word is necessary by way of definition. "Cost of production" may be interpreted in more than one way, and it is sometimes helpful to distinguish it from "expenses of production." By the latter is meant the money outlay upon the factors that go to produce a commodity. The wages that are paid to the labourer, the interest that is paid to the provider of capital, the profits that are received by the employer as a reward for his enterprise and management—these are the principal items in the list of production expenses. By "cost," on the other hand, is often understood the aggregate of the sacrifices undergone in the process of production. It refers not to the wages but to the actual effort of the labourer; not to the interest but to the abstinence involved in the saving of capital; not to the profits but to the personal services of the employer. The distinction is not without importance, as will be evident later, especially in connection with the distribution of income among the several agents of production.

PRIME AND SUPPLEMENTARY COSTS

Another classification of costs may be considered before we proceed to the main analysis—a classification which is not only of service to the theorist, but is applied in a practical way in everyday business. Gross costs are often divided into "prime" and "supplementary" costs. Prime costs represent the outlays on the materials and labour that are directly involved in the production of a commodity. Supplementary costs, sometimes known as on-costs, are those charges which are entailed by the undertaking as a whole, without any immediate relation to particular units of output. Rental, rates, managerial expenses, bank and insurance charges, and so on, are important items under the latter head. Broadly speaking, prime costs are borne only so long as production continues, and increase or diminish at about the same rate. Supplementary costs in a short period do not necessarily show any exact proportion to the volume of output, and may continue to be borne even though an establishment or service is temporarily closed down.

It needs little demonstration to prove the importance of this classification of costs. In periods of depression we hear of firms that continue to carry on by charging just sufficient for their products to cover the cost of labour and materials. The owners may make no profit at all, but at least they do not incur the heavy losses that might follow a complete stoppage of production. And, further, they have the satisfaction of knowing that, not only are they still providing employment for their men, but that, when trade shows signs of improvement, there will be no delay in getting their equipment ready to cope with new orders. In the course of time they hope to make up for the supplementary costs for which, during the depression, they receive an inadequate return.

The transport services provide several instances of the practical importance of the division into prime and supplementary costs. Many tramways companies, for example, allow passengers to travel between certain hours at specially reduced rates. The motive is partly to distribute the existing traffic more evenly over the day, but partly also to encourage a greater use of the services. It costs as much to run a tramcar whether it is full or half-empty; and if additional passengers can be induced to travel on the cars, even though the fares are below the ordinary level, the companies will receive some net addition to their existing revenue with no appreciable increase in the outlay.

Railway excursions are provided on the same principle. A considerable percentage of the railway companies' gross expenses is of an overhead character. The greater is the volume of their passenger traffic, the less is the unit cost to the companies. It would be impossible for *all* passengers to be conveyed at the reduced rates, but since a certain traffic at the higher rates is assured, it is found profitable to carry additional traffic at special excursion rates. This should not provide the ordinary passenger with an excuse for grumbling, for the companies would be quick to point out that if the excursionists were not carried at specially low fares the majority of them would not travel at all. The overheads of the railways remaining fairly constant, any reduction in the total traffic might, in fact, make it necessary to charge still higher rates to ordinary passengers.

Shipping companies act to some extent in a similar way. Certain countries import a larger volume of goods than they export, and, consequently, there is plenty of cargo space in the returning vessels. The shipowners quote specially low freight charges for the outward journeys for certain classes of goods, which, if the rates were higher, might not be transported at all. The list of examples could be almost indefinitely extended so as to cover every branch of production.

THE MARGINAL FIRM

Though one speaks of cost of production as a price-determining factor, the need for some closer definition soon becomes evident. One mill, for example, may be able to sell a roll of cloth of a given grade at a much lower price than a rival mill, yet make perhaps a larger profit. It may be more efficiently managed, or have a better technical equipment, or possess some other advantage which enables it to produce its goods at a lower unit cost than others. It is obviously insufficient to say merely that price is governed on the supply side by cost of production without specifying to whose cost we are referring.

Just as, on the side of demand, we noted that it was the marginal consumer who, in a sense, decided the buying price for all consumers, so, on the side of supply, it can be shown that it is the marginal firm to whose costs the price tends to approximate. For example, firm A can, if necessary, sell a certain standard article at 18s. and make the minimum profit which is regarded as essential to carrying on. Firm B cannot profitably sell it for less than 19s.; firm C, 20s.; and firm D, 21s. If A could in an instant increase its output to any desired degree, and retain its economies in production, it might charge 18s. for the goods and so capture the trade of all its rivals. But in a short period such a policy can rarely be carried out. The potential demand for the goods at 18s. would be greatly in excess of the supply that A could place upon the market. Even at 19s., perhaps, the potential demand would be greater than the combined supply of A and B. If the rice were 20s., the demand would just equal the total output of A, B, and C. Firm D could not compete at this figure, and would cease to produce.

The selling price thus tends to equal the cost of production (including the minimum profit) of C. Firm A *could* sell at 2s. less per article if it wished, but since, by hypothesis, it can dispose of all its output at the higher price, there is no advantage, from its own point of view, in cutting the price. It makes 2s. per article in excess of the basic profit with which, under less favourable conditions, it would be satisfied. Firm B, too, could sell for less than the existing market price, but, as it can sell the whole of its stocks for 1s. per unit more, it naturally prefers to do so. Firm C just manages to continue in business, at least so far as the production of this particular article is concerned. The last-mentioned firm is at the margin, and its cost of production is equivalent to the selling price of the commodity.

If, through increased demand, the price rises to 21s., firm D, previously below the margin, now becomes the marginal firm. If, through diminished demand, the price falls to 19s., firm B becomes marginal, and C drops below the margin. At whatever point the price is fixed, there is determined also the position of the marginal firm. As we observed when dealing with demand, price and the margin are interdependent.

In passing, we may note that the firms above the margin make a producer's surplus, which is analogous to the consumer's surplus previously considered. Rather than go without a certain article a purchaser would be prepared to pay a higher price than that actually charged. Similarly, rather than not sell its goods at all, the supra-marginal firm would charge less than the prevailing price. Owing to the favourable market conditions, it obtains a surplus profit in addition to that which may properly be regarded as the normal. This element of surplus in profits, as well as in other forms of income, will be more closely examined in Part III.

EQUI-MARGINAL RETURNS

It will be recalled that there is a marginal stage in the consumption of successive units as well as a marginal consumer in the range of purchasers. In other words, while there is usually in every group of consumers one at least who is just induced to buy at the existing price, there is a certain unit in the consumption of successive amounts of a commodity from which each consumer derives a marginal utility. Corresponding to the marginal consumer, there is the marginal producer. Corresponding to the marginal utility, there is the marginal cost. The consumer finds that the utility of additional units diminishes until there is nothing to be gained from further purchases. In a roughly similar way the producer may find that the cost per unit increases until it no longer pays him to increase his output. Or, if he still enjoys increasing returns (i.e. diminishing unit costs), additional supplies may bring about such a fall in price, and in profit per unit, that he is disinclined to increase his production beyond a certain stage. This stage is indicated when the payment for the additional product yields a bare minimum profit and no surplus.

Production, therefore, tends to be carried up to that point at which price and cost (including minimum profit) are equal. Or, to state it in another form, price tends to equal marginal cost. This is not to imply that the price of an article is equivalent for all time to the highest unit cost of production. It is a matter of common experience that commodities which are produced under increasing returns, and for which the demand is elastic, have their prices successively reduced. Over a long period, as we have still to show, it is the least cost to which price approximates. But for the present we are ignoring long period and complicating conditions. In the short period, and especially at any particular point of time, it is the greatest cost that indicates the price.

Corresponding to the tendency for the consumer to lay out his money in such a way as to secure equi-marginal utilities from all the articles that he buys is the tendency for the producer to employ the factors of production in such a relation to each other as to obtain equi-marginal returns. The reasoning is very similar and need not be set out at length. We can picture a manufacturer who desires to obtain the maximum output from the resources at his disposal. He may be hesitating whether to spend a little more on labour-saving machinery, thus reducing his wages bill, or to continue to employ the original number of work-people. If he is swayed by purely commercial motives, his decision will be determined by the prospective profits to be obtained from the alternative modes of expenditure. He will spend relatively more on that factor which yields the greater specific product (so far as this can be ascertained) until the point is reached at which the advantage over the other factors disappears. He will adopt the same attitude to all the means of production under his control. So long as one of them yields a greater additional return than another he will give it the preference, until eventually the marginal returns from them all are equal. To continue to employ one of the factors beyond this stage would yield a smaller return than could be obtained from a greater use of one of the other factors. The most efficient organizer, therefore, is he who utilizes the factors in such proportions as to secure equi-marginal returns.

SECTION 19

COSTS AND THE TIME ELEMENT

THE conception of the "stationary state," while useful up to a point, is apt to be very misleading. Three stages in time may be distinguished. First, there is the actual moment at which market transactions take place, and at which stocks are fixed. Secondly, there is the short period, during which the technical equipment is fixed, though the output is somewhat elastic. Thirdly, there is the long period, which allows sufficient time for changes in the means of production. In the short period price tends to equal highest cost, but in the long period it tends to approximate to the lowest cost.

THE SHORT PERIOD

IN the previous discussions we have used the terms "long period" and "short period," relying upon the context to make their meaning clear. As, in the following pages, we shall examine the time element in its relation to value more closely than we have done up to now, it will be of assistance to say something at this stage on the conditions of supply and demand at different points of time.

In the literal sense, the shortest of periods is that prevailing at a single moment, when all the conditions of production and consumption are absolutely fixed. A "snapshot" picture of society is a popular device with many writers. The market price that a commodity fetches at a particular instant is said to indicate the forces of supply and demand operating at that moment. But great caution is necessary in basing conclusions on the conditions at a particular point of time. The picture is necessarily incomplete; it lacks reality. The currents and under-currents of economic activity do not show up in an instantaneous view of this kind, although they are liable to change the whole outlook in the course, perhaps, of a week or two. Supplies may seem to be plentiful, judging from the appearance at a single instant, but in a little time they may be the very reverse. Demand may seem to be strong, but be on the verge of a sudden contraction. Conversely, an apparent shortage of supplies may be only momentary, due to be followed almost immediately by an increase in market stocks. And a seeming sluggishness in demand may be but a transitory reaction, just about to give place to renewed purchases on a large scale.

The "short period," as used by the economist, cannot be rigidly defined for it does not specifically restrict the time to any prescribed limits. Compared with the conditions at a particular moment, those of the short period may seem very prolonged. They are "short" only in relation to the circumstances of the "long period" which we shall consider below.

In the short period we regard conditions of supply as being relatively, but not absolutely, fixed. There is a definite quantity of machinery and other technical equipment available. Output can be increased only by employing these appliances and labour more intensively. But working overtime is expensive, partly because of the higher rates that have usually to be paid, and partly because of the reduced efficiency per hour that often accompanies an extended working day. The cost of lighting and heating, too, may increase in more than proportionate degree, while the wear and tear of intensively worked machinery may be unduly heavy. There is the further difficulty that a sudden increase in the demand for materials, and possibly, too, for labour, may force up the prices of these requisites. The result may be an appreciable rise in the total costs of production.

On the other hand, if the demand contracts, producers have insufficient time to adapt their resources to the making of other articles (where this is possible), and, rather than allow their plant to be idle, they may decide, as we have previously explained, to sell their goods for but little above prime cost. How far they pursue this policy depends upon the peculiar conditions of the market for which they are catering. The producers may be loth to reduce the prices for fear of "spoiling the market." An injudicious cut in prices may prevent the market from recovering for a considerable time. Though many may prefer a policy of restricting output, they are not certain, under conditions of competition, that their rivals will pursue the same course. It is not mere coincidence that in times of depression the call for combination or association is the most insistent.

Comparative rigidity and inelasticity are thus characteristic of the short period. Supplies, as we have stated, are not absolutely fixed, but they are sufficiently predetermined to weaken the bargaining power of the producer. In the short period the buyer is usually in the better bargaining position, especially with regard to those commodities which are of a perishable nature. This is not to say that the seller does not look ahead, estimate the future trend of prices, and fix present prices accordingly. The less perishable his stocks, the less inducement there is to sell at low prices in the present. But there are many other circumstances to be taken into account. The seller may need ready cash; his storing facilities may be insufficient; while there is always the risk of his estimate of future prices turning out to be incorrect. As a rule, the producer, in relation to the consumer, has, in the short period, less influence on market conditions than he has in the long period.

THE LONG PERIOD

There is no definite line of demarcation between the long and the short periods. The terms are only relative. What might be considered a long period in connection with one commodity might be regarded as a short period in connection with another. Twelve weeks might be thought to constitute a long period in the market for ice cream, but twelve months might not be sufficient in the market for ice cream machinery. The long period for commodities such as blocks of mansion flats and ocean liners might easily run into years.

Broadly speaking, the long period is distinguished from the short period by the fact that adequate time is allowed to increase or decrease the technical means of production, and to make corresponding adjustments in the supplies of labour. If demand is increasing, sufficient time is allowed to build new factories and warehouses, make and install new machinery, and take on and train new employees. If demand is diminishing, there is sufficient time to close down the redundant buildings, dismantle the superfluous machinery, and discharge the unnecessary workpeople.

(Just as on the one hand there is no sharp dividing line between the short and the long period, so on the other hand it is impossible to demarcate between the conditions of the long period as described above, and those of a still longer period, which allows of alterations in population, in knowledge, in tastes and requirements, as well as in the technique of production and exchange. We may, however, be excused from pursuing the problem of valuation under such prolonged and indefinite conditions. For practical purposes we may leave out what have been called the "secular" movements, and confine our attention to the long period as ordinarily understood.)

To sum up so far, we can trace at least three main stages. First, there are the conditions at a particular time, when supply is either limited to the stock in hand, or is at least in the course of production. Secondly, there is the short period during which the plant and equipment are fixed, though the stocks may be, within limits, expanded or contracted. Thirdly, there is the long period, which allows sufficient time to elapse to permit of the extension or reduction of equipment, the introduction of new methods and policies, and the adjustment of labour supplies.

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PRICE IN THE SHORT AND THE LONG PERIOD

We may now proceed to observe the price-determining forces as they are affected under short and long period conditions respectively. In the short period, as we have explained, the supply is fairly constant, and demand tends to be the predominant factor in determining price. If supplies are short, the price may temporarily rise considerably above the marginal cost of production, in which both the prime and the supplementary costs are, of course, included. The high prices may tempt producers to work their existing plant (the quantity of which, it will be remembered, is fixed in the short period) more intensively, and put their workers on overtime. The additional supplies thus placed on the market may bring about a reduction in prices, but not perhaps down to the original level. If prices still show a surplus over the marginal cost of production, manufacturers and others may still endeavour to increase their output. Eventually the selling price may be no greater than the additional net cost, and at that point the producers, if wise, will cease to turn out additional quantities. But by that time the short period may have passed into the long period.

If supplies are over-plentiful the opposite set of tendencies comes into operation. Price in the short period may fall to prime cost, and in exceptional cases (where, for instance, the article is very perishable) may be reduced even further. Producers may cut down their output within the limits that short period conditions allow, in the hope of bringing about an improvement in prices.

Thus, in a short period, whether scanty supplies raise prices above cost, or ample supplies reduce prices below cost, the prevailing tendency is to bring about such modifications in the supply, the instruments of production remaining the same, as to cause price to coincide with the marginal cost. Hence, it may be generalized that in a short period the price of an article tends to equal the highest unit cost incurred in its production.

In the long period other forces come into operation. An enterprising firm is not content with a more or less constant return from the limited resources immediately at its disposal. It seeks to widen its market and possibly to capture some of the trade of its rivals. With this end in view it extends its establishment and the range of its activities, and, as a result of the greater economies in production, effects a reduction in prices. Some of the less efficient firms disappear. It is no longer worth the while of the remaining firms to push their production to the marginal point which previously was just found profitable. Thus, the conclusion that price tends to equal the highest unit cost of production is limited strictly to the short period. In the long period the opposite applies. Provided that competition is present, that the goods are being produced under increasing returns, and that the demand is sufficiently elastic, the price of a commodity will tend in the long run to equal the lowest cost of production, notwithstanding the tendency at any given time for it to approximate to the highest cost. There is no contradiction in these two statements; the lapse of time makes all the difference.

SECTION 20

COMPLEX CONDITIONS OF DEMAND

THE direct and indirect relationships into which most commodities enter serve to complicate the theory of price-determination. Joint, derived, and composite demand, each gives rise to its own special problems, though the same general principles still apply.

JOINT DEMAND

MUCH of the reasoning contained in the foregoing sections has, for purposes of simplicity, been based on the assumption that a commodity has been the sole subject of demand or supply, and that no joint or indirect relationship with another commodity has entered into the determination of its price. In practice, the number of articles, the demand for and supply of which can be examined to the exclusion of such other relationships, is very limited. The marketing of water in an oasis is an instance of simplified price-fixing. The seller supplies water and nothing else. The buyer requires water for the immediate purpose of quenching his thirst, and for no other object. Yet even under these conditions, the value may be indirectly affected, however remotely, by the existence of other commodities or purposes, which serve to modify the demand for or the supply of drinking water. These qualifying factors apply, with greater or less force, to nearly all commodities that enter into exchange.

The first relationship to be noted is that known as joint demand. There is said to be a joint demand when two or more commodities are required together in order to serve a particular purpose. The commodities may be wanted in definite and fixed proportions, or the quantities may be variable within wide limits. One commodity may be jointly demanded with more than one other commodity. Further, besides being complementary to another, it may be in demand for its own direct utility.

There is, for instance, a joint demand for paper and cloth in making a book; for wood and canvas in making a deck-chair; for vulcanite and gold in making a fountain-pen. A joint demand also exists for matches and tobacco, and for meat and vegetables. The degree of the relationship between these several examples is by no means uniform. The decision of a publisher to issue a work in two volumes instead of one naturally affects the ratio between the cost of binding and that of paper. The ratio between beef and potatoes is still more liable to variation. The ratio of the respective demands for the parts of a fountain-pen is more constant, while examples can be found (such as a chemical compound) in which the proportions are absolutely fixed.

Tobacco is not of much use apart from its usual destination, but its complement, matches, may enter into another joint relationship for satisfying one's wants. The gold that is jointly demanded with vulcanite is required along with scores of other commodities. And, lastly, many of the articles referred to are capable of giving a satisfaction, in one form or another, independently of the consumption of a complementary commodity.

DERIVED DEMAND

A somewhat similar, and no less important, conception is that of derived demand. A commodity may or may not be required as a complement to another. But almost invariably the demand for it gives rise indirectly to a demand for other commodities which themselves are in joint demand. Thus, the demand for a motor-car leads to a derived demand for steel, wood, rubber, and numerous other materials, together with labour, which is always a prominent item among the factors in derived demand.

Though it is not an easy matter to trace with any accuracy the action and reaction of one set of prices on another, the general nature of the interaction can readily be understood. If two things are in joint demand, a rise in the price of one of them may so diminish the total demand as to cause a reduction in the price of the other. If the fall in the price of the second factor just compensates for the rise in price of the first, the demand will return to its former level, provided that other conditions remain unchanged. But it is safe to assume that the long run effects will work out differently. The reduction in the price of the second commodity, if it occurs at all, is likely to be but temporary. Its final position will depend upon the extent to which the commodity can be used for other purposes, the degree of monopoly revenue in the profits from its production (on which we shall have something to say shortly), the amount of sunk capital involved in its production, and several other conditions that readily spring to mind.

Fluctuations in the supply and in the price of factors employed in production naturally exercise an influence on the price of finished articles. It does not follow, however, that a variation of a given amount in the price of the part will have a corresponding effect upon the price of the whole. Several conditions determine the force of the reaction. First, of course, are the circumstances of the demand for the finished product. If the demand is elastic, the sellers will have a more difficult task in increasing the price to compensate for the higher costs than they would have if the demand were fairly inelastic. If competition is effective—and for the moment we may assume it to be so—the producer will be more inclined to cut down his production costs than to adopt the course of raising the selling price.

A second condition that has to be observed, if a rise in the price of a part is to be transmitted to the price of the whole, is that the factor must be essential to the production of the commodity. If it can be dispensed with, or if an effective substitute can be employed at a lower price, the producers will hesitate to use the same quantity as before. The greater the shortage, and therefore, as a rule, the higher the price of a component part, the greater is the inducement for the makers to search for substitutes or alternative processes.

Thirdly, the ratio of the cost of the part to that of the whole must be fairly small if the increased cost is to be shifted without serious dislocation. The cost of the factor may be doubled, but if that factor is used in small quantities only, the total costs may not be appreciably affected. Even where the extra charge is considerable, the producer may be able to make up for it by cutting down the outlay on the other factors.

Thus, if the final price is to remain unchanged, the demand for the other factors required in the production of the commodity should be relatively elastic, so that either the amounts used are capable of reduction or cheaper substitutes can be employed in their place. In these circumstances, the price of the finished article might remain unaltered, notwithstanding a rise in the cost of one of the requisite parts.

Where rivalry is keen the stimulus to the producer to choose the factors of production in the most economical proportions needs no comment. Under monopoly, too, the producer finds it to his advantage to employ those agents, and in just the proper proportion, so as to yield him the greatest profit. Any tendency, following a rise in the price of a factor, to increase the charge for the finished product may be immediately checked by a contraction of the demand. The monopolist, hardly less than the competitive producer, is impelled to resort to a policy of cost reduction rather than one of price increase.

THE DERIVED DEMAND FOR LABOUR

An example will serve to bring out the significance of the above conditions. We have already remarked that labour is one of the most important agents in derived demand. Let us take a motor-car as the finished article, and the labour of skilled electrical engineers as one of the factors indirectly required. Suppose that, for reasons which need not for the moment be considered, the supply of this kind of labour becomes relatively scarce. As the skill cannot be acquired except by a lengthy period of training, not to mention the restrictions that are imposed by the trade unions, fresh supplies of labour cannot come forward for a considerable period, and in the meantime the specialized workmen demand high rates of pay. It will be assumed, for the purposes of the argument, that the electrical equipment is made under the control of the motor manufacturer, though it is quite common for the components to be supplied by independent firms.

Let us now apply the test of the above conditions. The increased cost of this particular kind of labour may induce the motor-car manufacturer to raise the price of his products. But the demand for cars is very sensitive to price changes. Besides, competition in this industry is very keen, and few manufacturers would embark upon a price-raising policy unless they were sure that their rivals would do the same. Some of these rivals, as likely as not, would seize the opportunity to extend their own sales, particularly if, by so doing, they reduced their overhead charges by perhaps more than the increase in part of the wages bill.

Secondly, the fact that electrical engineering is indispensable to the production of a car prevents the manufacturers from dispensing with its service. Particular forms of electrical mechanism, it is true, may be preferred on the score of economy to another—the coil and battery, for instance, may take the place of the expensive magneto—but the demand for the special grade of labour as a whole is thereby little affected. So far as this condition is concerned, the workers are in a strong position to enforce their demands.

Thirdly, the proportion of the cost of electrical engineering labour to the total outlay on a complete car is not of large dimensions. When account is taken of the numerous other forms of labour required, of the expense of materials and manufactured parts, and of the heavy standing charges, the ratio of the cost of this particular kind of labour is seen to be comparatively small. On these grounds, too, the electrical workers are in a favourable position.

Lastly, is the demand on the part of the manufacturer for the other labour and components relatively elastic? There certainly are branches of his establishment which are not engaged in such vital work, and which, if no outlet were possible in the form of a higher selling price, could be cut down so as to balance the extra cost elsewhere. Thus, a motor-car manufacturer, faced with a higher wages bill for the electrical workers, yet unable to raise the price of his vehicles, might restrict the expenditure in the body-building department. He might, if circumstances permitted, reduce the wages rates paid there. He might also decide to employ inferior materials in a further endeavour to compensate for the increased costs in another section of the works.

The example is admittedly hypothetical, but it illustrates the interaction of values of commodities and services in joint and derived demand. Instead of a rise in the cost of electrical labour, the manufacturer might be faced with an increase in the price of tyres. The immediate reactions would probably be much different, but the consequences would reverberate in the same general manner throughout the establishment, and possibly affect other industries as well. A movement in the price of one important part might ultimately bring about a complete readjustment of the values of all the other parts directly or indirectly required.

COMPOSITE DEMAND

Demand is said to be joint or derived when the commodities concerned are required, directly or indirectly, to fulfil a particular purpose. But when the individual commodities are capable of fulfilling other purposes as well, and several types of consumers compete for the existing supplies in order to satisfy their respective wants, there is said to be a composite demand. Thus, to extend our previous example, there is a joint demand for motor-cars and garages; through the demand for cars a derived demand for steel and rubber; and, owing to many alternative uses of steel and rubber, a composite demand for these materials on the part of many other industries. The problems that a composite demand presents are interwoven with those which we have already considered, yet are sufficiently independent to merit separate treatment.

The electrical engineers mentioned above competed with the other workers and, in a sense, with capital instruments, for employment by the motor-car manufacturer. In considering their bargaining position, and the probable effects of a claim for increased wages consequent upon a shortage in their supply, we deliberately disregarded the reasons that led to their comparative shortage. If a long period were allowed to elapse, the explanation might simply be that the rewards of the calling were regarded as inadequate and that therefore the number of recruits fell off until the supply of skilled labour became seriously attenuated. But this would hardly be true of a growing vocation like electrical engineering. There are certain trades which, owing to the peculiar conditions to which they are subject, have experienced a falling-off in recruits. Plasterers, for example, are not nearly so plentiful as they used to be, not so much because the post-War boom in building has greatly increased the demand for their labour as because the industry, for various reasons (such as "broken time" on account of weather vagaries), has failed during the last few decades to attract an adequate number of workpeople to its skilled ranks.

A shortage in the supply of electrical engineers, should it occur, would not be due to factors such as these. More likely it would be occasioned by an increased demand in other and new industries. The growth of the radio industry, for example, might, unless the supply of trainees kept up with the demand, indirectly cause a scarcity of electrical workers in the motor-car industry. The reactions, therefore, set up by a restricted supply of labour in a particular industry are liable to be even more complicated than those which we have already described.

The composite demand for the material factors of production gives rise to similar considerations. Coal, iron, wood and leather—to mention but a few of the basic commodities—are required for innumerable purposes. The price of each is influenced by the number and the character of the purposes to which it is devoted. The same is true of those capital instruments, such as lathes, which, with little or no adaptation, can be used in a variety of industries.

Whether the factor happens to be a personal service, a capital instrument, or a raw material, the available supplies, for reasons that we have previously explained, will tend to be apportioned among the several uses in such a manner that the marginal utilities (or pi ities) are equal. The same general principle of eq at the margin applies to the composite demand ngle commodity as to the individual consumer's de r several commodities, though in practice many stances may conspire to hinder an evenly bala adjustment.

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SECTION 21

COMPLEX CONDITIONS OF SUPPLY

WHEN goods are produced from a common source their prices are necessarily related. The independence is closer when they are turned out in fixed proportions to each other. Differences in the elasticity of the demand for the joint products complicate the problem of price-fixing, as do also divergencies in costs in the later and independent stages of production. The prices of commodities that are partial or complete substitutes for each other are naturally interdependent.

JOINT AND MULTIPLE SUPPLY

WHEN two or more commodities spring from a common origin there is said to be a joint supply. A close correspondence exists between this conception and that of joint demand, and the practical problems to which it gives rise are no less important. Innumerable examples can be found of a producer turning out a variety of goods from a single source, the price of each commodity being necessarily influenced by the price at which the other joint product sells. Thus, the price of coal gas is intimately bound up with that of tar and dyes, not to mention the obvious connection with the price of coal itself. Similarly, the joint supply of corn and straw, of meat and hides, of electric lamp bulbs and radio valves, involves an interaction between the costs of the articles in each group in the determination of their respective selling prices.

Allied to joint supply is the condition of multiple supply. In the former category there is literally a single source of all the commodities composing a group. In the latter there is no common origin in the purely physical sense. Thus, a manufacturer of gramophones often turns out records as well, but there is no inherent connection between the two products. In fact, the relation between the departments producing these commodities may be administrative only, and the establishments, though subject to a single control, be miles apart. In so far as such undertakings are made up of concerns which formerly were separate businesses, but which have merged all their interests, the position is one of financial and commercial control rather than of joint supply as ordinarily understood. But in so far as the directors employ the resources and equipment at their disposal to facilitate the purchase of materials and the making and marketing of their numerous products, their organization has something in common with joint production.

Or, to take a purely distributive example, the owners of a departmental store or even of a humble shop in a side-street provide a large range of commodities, some of which are more difficult and expensive to sell than others. There cannot be a straightforward apportionment of costs among the numerous lines kept in stock. One commodity may yield a large gross profit. Another may not have much of a market, and may have to be sold at a loss. Once the store has been established, certain lines may be added to the stocks without a corresponding increase in total costs. The price-determining conditions, therefore, bear a certain resemblance to those of joint supply.

Aggregate and Individual Cost

Some commodities cannot possibly be produced without others, and the proportions are rigidly fixed. These are the most perfect examples of joint supply. Thus, wheat and straw are grown in an almost unalterable ratio. The corn in agricultural countries is exported, but the straw will not warrant the expense of transport. Hence, in wheat-exporting countries the straw sells at a very low figure, though in countries like Britain, where the supply is not so plentiful, the price is appreciably higher.

Other commodities, though coming from the same source, do not have their respective proportions predetermined quite so rigidly. The dairy farmer can decide to sell more milk and make less butter. The sheep farmer can, up to a point, modify the proportions, as well as the quality, of mutton and wool. Both the dairy farmer and the sheep farmer are in a stronger position in that they can alter their ratios, whereas the corn grower has a fairly inelastic supply of straw which he must dispose of at the best price he can get.

Then there are those products which allow the producer a fairly wide choice in determining the final destination. A colliery owner has a certain range of uses to which he can put his coal. He does not rely upon the revenue from the raw product to nearly the same extent as did his predecessor of a generation ago. In the future he may rely even less. In view of the large variety of coal products, the selling price of the fuel for direct consumption may not exercise the same power over that of the by-products as it has done until now. Indeed, what previously has been considered the main product may come to be regarded as a secondary by-product.

The supplier of multiple products is in the best position for adjusting his goods to particular demands. He can cut down or increase the supply of one commodity without troubling about a shortage or a surplus in the supply of another. His latitude, however, applies mainly to the prime costs. He cannot modify or apportion the supplementary costs so readily. His policy, therefore, will largely depend upon the ratio of prime to total costs.

Supplementary charges may be a considerable element in joint costs, yet it is almost impossible in many cases to calculate with accuracy the share that should be borne by individual products. Take, for example, the expenditure on advertising. Where a firm extols to the world the virtues of a single commodity, and orders pour in for that commodity and for no other, it is a simple matter to estimate the charge of advertisement per unit sold. But, where a firm advertises a large number of articles together, a precise statement of publicity cost for each type of product is more difficult to obtain. Further, where a firm spends large sums, not in proclaiming specific goods, but in popularizing its own name (such as by the constant reiteration of business slogans), exact apportionment of cost to individual prices is altogether impracticable. When a multiple grocer sells sugar at less than cost in order to tempt people to come to his stores where, it is hoped, they will buy other things as well, there can be no question of accurately balancing the expenses of and the revenue from the particular articles that he sells. The deficit on sugar is in reality an advertisement charge that must be spread over the whole of the goods offered for sale.

Joint Cost and Elasticity of Demand

An enlightened producer does not merely set his aggregate revenue against his aggregate cost, and be content, if a substantial balance is in his favour, to pursue the same course as before. Instead, he will want to know whether a different arrangement of his resources or a different ratio of his products will make the business even more profitable. His policy will be largely determined by the fixity or otherwise of the relationship between the joint products, and by the respective elasticities of the demand. If he can produce the several articles in such variable proportions as he pleases, his task is straightforward. He will increase the amount of those goods that obtain the more profitable prices and turn out fewer of those that fetch the lower prices. The farmer, for instance, will vary the amounts that he makes of butter and cheese according to the prices they bring at different times.

But, if a producer cannot make one commodity without at the same time turning out a definite proportion of another, his procedure will not be so simple. The demand for one of the products may not follow the same direction as the demand for the other. If the demand for one of the products is strong, a rise of 10 per cent in the price may have no effect upon the amount that is required. But if the other commodity that is jointly produced is subject to an elastic demand, the producer will have to reduce its price if the whole of the stock is to be taken off his hands. If his competitors do the same, there may be such a collapse in the price of the subsidiary product that he makes from it a smaller profit than before, in which event he will regard the higher price of the first product as partly consisting of compensation for the reduced profit on the second.

If the demand for one of the joint products falls off, and the supply of that product cannot be cut down without diminishing the supply of the other, the policy of the producer will be determined largely by the relative importance of the first product as well as by the conditions of the demand for the second product. If the commodity for which the demand declines is the chief source of his revenue, he will not hesitate to cut down the total supply, even though his sales of the subordinate commodity are less than he would otherwise enjoy. But if the commodity in question is of secondary importance, he will obviously not cut down the total production, for by so doing he is liable to lose heavily on the main product. Instead, he will keep the total supply at the existing level, and reduce the price of the minor product so as to stimulate the demand and thereby dispose of all his stocks. The greater the elasticity of the demand for this product, the easier it will be to pursue such a policy.

Where, however, a manufacturer is turning out a number of joint products, the amount of any one of which cannot be varied without corresponding alterations in the quantities of the others, or where the joint products are about equal in importance, his actions, following a change in the demand for one of his commodities, will tend to pursue a more complicated course. One of his products, could it be independently produced, might warrant a larger and more lucrative sale at a somewhat lower price. Another might advantageously be sold in smaller quantities at a rather higher price. (The presence of competition may prevent the manufacturer from charging the higher price and storing some of the stocks, or perhaps throwing them on a dump.) The wise producer, who finds himself unable to alter the proportions of his products, will consider his costs and his revenues as a whole, and regulate the aggregate supply in such a manner as to secure for his outlay the maximum net revenue.

Disproportionate Costs

Still another complicating factor has to be taken into account in discussing the interaction of prices of joint products. Seldom do we find commodities that are jointly produced down to the final stage without, in the final processes, some divergence of methods and the incurring of some special expense. Instances are rare in which the cost of producing the main article accounts for the whole of the expenditure incurred in the joint production. The fact that, after a certain stage has been reached, each commodity is usually subjected to a process peculiar to itself prevents the producer from making a straightforward division of costs.

A few joint products, however, seem to conform to these conditions. Cotton fibre and cotton seed, for example, are grown together in practically invariable proportions, and the cost of cultivation and separation must be borne by the two together. The proportion of the revenue that is derived from the seed is so small that fluctuations in its price would not considerably affect the amount of cotton that was grown. Up to this point, then, it may be said that the cost of producing the main product is identical with the cost of producing the two.

But the example, if carried a stage further, becomes imperfect. The cost of marketing, an important item nowadays, is not necessarily the same for the one as for the other, nor need it be undertaken by the same department. From that point onwards the respective costs may be very dissimilar. The cotton fibre goes its own way through numerous processes. The seed is pressed, and yields oil and oilcake. The costs of the joint products are now on different paths, and the connection between their prices becomes less direct.

The individual costs of most joint products start on their own way long before those of cotton fibre and cotton seed. In nearly all the examples given in the foregoing pages a point is reached at a comparatively early stage at which the processes become independent and special expenses are incurred. With some commodities originating from a single source the cost of the later independent processes may be greater than the share of the earlier common expenses. The cost of preparing and making up wool, for instance, is considerably heavier than the cost of obtaining the fleece conjointly with mutton. And, where one source yields a large number of products, the common processes may extend even a smaller distance along the whole way. There is, as it were, a short trunk but a number of lengthy branches. The distance between the several final products grows wider, and the relationship between their prices becomes more indirect than ever.

COMPOSITE SUPPLY

We have shown that the notion of joint supply corresponds to that of joint demand. It remains for us to discuss the problem of composite supply, which is analogous to that of composite demand. Commodities are said to furnish a composite supply when they can be used as substitutes for each other in satisfying a class of wants. Under composite demand one article can be used for a variety of purposes, and there is competition among the different types of consumer to obtain possession of it. Under composite supply the rivalry is between the sellers of the commodities to obtain the custom of the purchaser.

There is no end to the examples of composite supply. Not only does beef compete with mutton, but the two together, together with all other kinds of meat, compete with alternative foodstuffs. If meat becomes dear, people with small incomes buy less of it and more of bread and vegetables. Similarly, there is a composite supply of wool, cotton and silk, and of bricks, concrete and steel. There are, in fact, very few commodities that are altogether free from the rivalry, actual or potential, of other commodities.

The competition between the articles in composite supply results in a certain inter-relation of their prices. A shortage, and therefore a rise in the price of beef, causes part of the demand to be diverted to mutton, which also goes up in price. The relationship is still more marked in the prices of butter and margarine. Though the cost of production of the latter is fairly constant throughout the year, the selling price fluctuates with that of the former. This "sympathy" in prices is of considerable importance, and will be examined more closely in the following section.

SECTION 22

INTERACTION OF DEMAND AND SUPPLY

SYMPATHY in prices extends not only to substitutes, but, in the long run, to articles that appear to have little in common. There are many complex cases, such as to be found in commodities that are both in joint supply and joint demand, or composite supply and composite demand, etc., in which the final position of the price is determined by the relative strength of the conflicting forces.

SYMPATHY IN PRICES

THE sympathy in prices of goods capable of substitution for each other may be permanent or temporary, according to the conditions that respectively govern their production. If they are equally subject to increasing or diminishing returns, and especially if the demands for them are equally elastic, the long run effects will tend to be similar for all of them. But if they are produced under different conditions of cost, the one which enjoys the largest measure of increasing returns will be at the greatest advantage. A rise in the price of commodity A may lead for the time being to a sympathetic rise in the price of commodity B. But if B is produced under increasing returns, while A is produced under diminishing or constant returns, or is produced under increasing returns but not to the same degree, the producers of B will eventually reduce their prices by more than their rivals find possible, and thereby tend to capture the market. Indeed the manufacturers of B might refrain at the very outset from taking advantage of the shortage and raising their prices, in order that they might derive the full benefit of a large demand and low unit costs at an even earlier date. Whether they would adopt this course would depend upon the foresight of their directors and upon the speed with which they could increase their equipment and output. If their plant were already working to full capacity and it could not be extended for several months, the firm would possibly find it more profitable to raise their prices until such time as their equipment could cope with a larger demand, and then bring them down again.

If one substitute has a permanent advantage over another in the cost of production, and if it satisfies the consumers' requirements with equal efficiency, then evidently its producers will tend eventually to squeeze out their competitors. In practice, however, the rivalry may continue, though with diminishing force, for a long time. The manufacturers of the more economical product may not be quick to seize their advantage. Some consumers of the more expensive substitute may still persist in their original choice. Their preference may be due to habit, and their means may be large enough to make them disregardful of the cheaper substitute. Or they may wish simply to be "different," and be prepared to pay for the privilege. But substitutes which are absolutely competitive in every respect are uncommon. Though they serve the same general purpose, one of the commodities may fulfil it more effectively, or may be specially preferred by the consumer. Thus, while there is a certain rivalry between tea and coffee, many people have such a pronounced liking for one of the beverages that even a marked rise in the price would not induce them to change over.

Though this sympathy is most evident in the prices of substitutes, it is to be found also, though not so obviously, in the prices of commodities which in nature and purpose may be widely apart. Bread and football may seem to have little in common, but if the price of the former goes up to a serious extent, a man whose income allows little surplus over his family's minimum requirements may have to forgo his Saturday afternoon's entertainment. If the poverty in a district is very acute, and persists for any length of time, the prices of admission to football matches may have to come down. The prices of necessaries, therefore, may indirectly affect the prices of luxuries.

Thus, the price of everything that enters into a person's budget must have some effect, however indirect, upon the price of all the other items. And what applies to the individual applies also to the whole community. Underlying the seeming disparity of commodities and their prices are the same common forces which, by adjustment and re-adjustment, tend to bring about an equilibrium between costs and utilities. All commodities are subject to these universal forces, and one cannot properly study the prices of particular products in isolation from the rest.

Some Complex Cases

Some commodities are discovered in so many different relationships to other commodities that it is impracticable, in the light of our present knowledge, to estimate with any precision the forces determining their prices. One complex case is that in which two commodities find themselves both in joint supply and in joint demand. Petrol and oil, for example, are obtained from the same source. They are required together in working an engine. The problem of their respective prices is further complicated by the fact, on the side of supply, that petrol from the oil fields has to compete with coal-produced spirit, and that mineral oils have to compete with vegetable oils; and by the fact, on the side of demand, that petrol-driven engines have to compete with other means of propulsion. The further fact that petrol has been singled out for taxation makes the conditions of price-fixing more intricate than before.

Another complex case is that in which commodities are found both in composite supply and in joint demand. Consider, for example, bricks and concrete. They supplement each other in the erection of a building, yet at the same time they are in competition with each other. In so far as they are regarded as substitutes in composite supply, an increase in the price of one of the products is likely to divert some of the demand to the other, causing a sympathetic rise in price. But in so far as they enter into a joint demand, the extra payment that has to be paid for the one may so react, in the manner already explained, as to cause a fall in the value of the other. Thus the price of the second product is being pulled in opposite directions, and the final position will be determined by the relative strength of the conflicting forces.

Or, again, a commodity may enter into a joint supply with one product and into a composite supply with another. Cotton, to repeat, is jointly produced with cotton seed. Its price is partly dependent upon the revenue from the by-product. It competes with artificial silk for use in textiles and has its price influenced from that quarter as well. In both cases there is a tendency for the price to fall. But, while the presence of the by-product may more than make up for the smaller revenue from the cotton fibre, there is no compensation when the competition of the artificial silk compels a cut in price.

Instances such as these could readily be multiplied, but we have quoted sufficient to show the difficulties attendant upon the problem of valuation. It is a comparatively easy matter to state the general principles of price determination, but the apparent simplicity can be very misleading. One has only to single out particular commodities, and note the several relationships they are almost bound to have with other commodities, to appreciate the real depths of the problem.

REVIEW OF PRICE-DETERMINING FACTORS UNDER COMPETITION

In tracing some of the complex conditions of price-fixing, the main and underlying principles of valuation should not be lost sight of. Until now we have been assuming a state of competition both among buyers and among sellers, and, before proceeding further, it will be useful, perhaps, if we recapitulate the chief conclusions that we have so far reached.

Beginning, but only for convenience, with conditions of demand, we showed that the actions of consumers in general gravitate around utility. The amount of utility, however, that a commodity affords does not necessarily measure the value. In order to understand the interrelation, we had first to study the nature of utility. The variability of the capacity of a commodity to satisfy the wants of different people, and of the same people at different times, which was a stumbling-block to former economists who attempted to relate utility to value, becomes incorporated in the modern theory. The utility of successive equal units of a commodity tends to diminish, but the consumer continues to acquire further units until the utility of the last purchase is equivalent to the utility of the unit of money, which is itself estimated by reference to its power of exchange for that and other commodities. Price approximates to the money measure of marginal utility. Pursuing this line of argument, we showed that individual consumers, and the community as a whole, obtain the greatest satisfaction for their expenditure when the marginal utilities of all the articles purchased are of equal degree.

Turning next to the conditions of supply we examined the nature of costs. There is no immediate connection between cost and price, for the former varies with different firms and with different parts of a single firm's output, whereas price in a competitive market is necessarily uniform. Here, too, it is at the margin that the relationship can be best observed. We showed that price tends to approximate to the marginal cost of production, and that producers in general obtain the greatest return from the factors at their disposal when the marginal returns are equal.

On the side of demand, then, price approximates to the money measure of marginal utility. On the side of supply, it approximates to marginal cost. It follows that price tends to be determined at that point at which marginal utility and marginal cost are equivalent.

In the course of the argument many modifications and reservations had to be made, and complex cases of demand and supply had to be considered. In particular, the qualifications entailed by the time element need to be emphasized. In the short period, demand plays a relatively larger part in determining price than it does in the long period. In the long run, cost of production is the predominant factor. Furthermore, while at any particular time the price tends to equal the highest cost of production, over a period, in a progressive community, the price tends to equal the lowest cost. In the dynamic conditions in which we live relative values are constantly being adjusted and readjusted in accordance with the numerous forces that we have outlined.

SECTION 23

MARKETS AND SPECULATION

THE modern market is not necessarily confined to a particular place, but may be world-wide in its scope. For a commodity to have a wide market, it should be portable, and have a high value relative to its transport cost. Market price is subject to variation from day to day, but the presence of the speculator serves in some degree to adjust demand and supply, and thereby lessen price fluctuations. All speculation, however, is not of this beneficial character.

GROWTH OF THE MARKET

WE have been dealing with the interplay of demand and supply without having said anything so far about the market conditions under which the two forces come together. In the ordinary sense of the term, a market is a place where buyers and sellers foregather and effect their mutual transactions. The goods in which they deal may actually be brought to the place of exchange, and many markets, even in an advanced community, are still of this elementary kind. In all parts of the country there are market towns to which farmers, dairymen, and others bring their live-stock or produce, and sell them on the spot. This form of market is almost as old as trade itself, and is still common for certain classes of commodities, especially those which the prospective purchasers wish to examine in person before deciding on purchase.

In modern times, however, the operations of buying and selling have, in the main, advanced beyond this simple stage, and the conception of a market has been widened accordingly. Early in the evolution of trade people realized the advantage of bringing to market representative samples instead of the total stock of goods. With such commodities as cattle and sheep this plan was not practicable, for standardization was out of the question.

Hence the live-stock markets of the present day are still similar to those of former times. They may be vaster and the scale of operations more considerable, but the principle is the same. But with commodities such as cloth or wheat, buyers and sellers found it more advantageous to base their dealings on samples, thus economizing in the costs of transport. It might happen that the place of sale was a comparatively great distance from the source of supply, yet the ultimate destination of the goods be near at hand. The use of samples would prevent the unnecessary double journey of the goods themselves, which could now be sent direct from the place of origin or manufacture to the premises of the purchaser.

Some commodities can be turned out of such a uniform quality, and their grades can be described with such precision, that samples may not be necessary. Cotton or steel, for example, can be accurately classified over many degrees of quality, and the buyer does not need to handle even the smallest amount. Reference to the identifying number or index of the grade offered or required is a sufficient basis for transacting business.

So far the buyers and sellers have been coming in person to the market, even though they have got beyond the stage of handling there the goods they deal in. But with the advent of modern means of communication, particularly the telephone, their physical presence becomes less necessary. There is, it is true, a growing number of specialized exchanges, but the need for personal contact between the respective parties is now not so pronounced. The market, though nominally confined to a particular place, may have a national and even international importance. A commodity like money, which, in the form of credits, can be transmitted quickly and cheaply from one part of the globe to another, has ceased to have a local market in the strict sense of the term, and the net rate of interest tends to uniformity throughout the world.

CONDITIONS OF A GOOD MARKET

A perfect market is as rare as perfect competition. Some commodities permit of an easy adjustment of supply to demand, and are said to possess a good market. Both sellers and buyers are well informed of the conditions, and are able at short notice to adapt themselves to circumstances as they arise. But few markets approach the ideal of instantaneous and uniform price-fixing. Under conditions of perfect competition there cannot be more than one price at a time for a commodity of given specifications, but it frequently happens that, owing to immobility or ignorance or similar reasons, an automatic adjustment is not possible.

Communication and transport are factors of the first importance in modern markets. The more readily districts and countries are brought into touch with each other, and the facilities of conveying their products are developed, the wider and more effective does the market become. The introduction of the railway led to the supersession of small local markets by large national exchanges. The steamship rendered world wheat and cotton markets possible. The telegraph and telephone made the money market truly international. Also, innovations in the art of preservation have made it possible for ordinary perishable commodities to travel great distances and be held in store for considerable periods. The refrigerating and canning processes, for example, have enormously extended the market for foreign meat and other edibles.

The cost of transport must, of course, be considered in relation to the value and bulk of the commodity. The world-wide market possessed by gold is partly attributable to the large value that is compressed into little space, and the cost of transmitting it from one country to another is very small. Compare this with the cost of sending coal. One reason for the intense localization of industries in the North and the Midlands was the desire to have the places of manufacture on or near the coalfields. It was cheaper to bring the raw materials to the coal than the coal to the raw materials. Now that the reliance upon coal is not so great as it used to be, and certain counter-forces have come into operation, a tendency to de-localization, as we have previously explained, is now in evidence.

On the side of supply, then, a commodity, in order to have a wide market, must be portable, have a high value relative to its bulk, be comparatively durable or capable of being rendered so, and permit of exact estimation and description. On the other side, there must be a large and regular demand. A commodity which is subject to the whims of passing fancy is unlikely to be turned out in such large quantities and be provided with such an adequate marketing organization as one which is in universal and regular demand.

MARKET PRICES AND SPECULATION

In any survey of actual market conditions reference must be made to the middlemen who buy only to sell again, and, while selling, are already contemplating the replenishment of their stocks. These intermediaries are now a common feature of our commercial organization, and range from the humble small shopkeeper at the one extreme to the manipulator of world supplies at the other. They all, in some degree or another, participate in the risks of business, relieving the actual grower or manufacturer of some of the responsibility of finding a customer for his goods. In all their undertakings there is an element of speculation.

Usually, however, speculation is taken to refer to the activities of those men who buy and sell on the stock and produce exchanges, who, as often as not, contract to deal in goods for future delivery. True speculation can be shown to have some economic justification. Market prices may vary from day to day, and even from hour to hour. But if it were not for the operations of skilled professional speculators, the fluctuations in prices might be still more considerable.

The specialist in a particular market makes it his business to know all conditions affecting it, and to forecast the probable trend of prices. He buys in those quarters where the price, in his opinion, is lower than the prevailing or impending conditions warrant. He sells where the price is higher. There are many others like him, all eagerly searching for the most advantageous purchase or sale. Should the price drop in one part of the market, the dealers are quick to acquire the stocks. Should it rise in another part, they are equally prompt in offering to sell. The net result of all these operations, provided that they are in the hands of skilled dealers and are not carried to excess, is to smooth out variations in the price.

Speculation and Price Fluctuations

Speculative dealings may lessen price variations, not only from place to place at a given time, but also over a long period. Suppose that a trader, who is conversant with the market in which he has specialized and is competent to predict with reasonable accuracy the probable trend of prices, anticipates that in six months' time supplies will be short and prices appreciably higher than the prevailing level. He enters into a contract with the grower or manufacturer to purchase a quantity of goods at the future date at a price which he expects to be lower than the market value at that particular time. The seller is guaranteed a definite price for his output, and is able to go ahead with production free from all anxiety. It is unlikely, however, that the dealer will be alone in foreseeing a rise in prices. Other traders are quick to grasp the situation and place orders at current prices for future delivery. The increased demand by these middlemen naturally causes prices to rise to some extent almost immediately. The result is two-fold. On the one hand, consumers are likely to restrict their purchases, unless they, too, anticipate a further rise and place their orders in advance. Sooner or later, however, the total demand is almost bound to fall off, with the result that, from the side of consumption, the tendency to a considerable rise in prices is checked. On the other hand, producers look ahead and are encouraged by the prospective increase in prices to extend the scale of their activities and to place larger supplies on the market. Thus, on the side of supply also, forces are set in motion which eventually serve to keep prices nearer to the original level. As time goes on, prices may rise appreciably, but the combination of all the circumstances of demand and supply may have the effect of preventing such a marked increase as the speculators had at first anticipated. Owing to lessened consumption and increased production, stocks are not so depleted as was expected and price fluctuations are not so great. Dealers who were first in the field, and bought for future delivery at the lowest prices, make the largest profit. Those who followed on later may make no profit at all, and even suffer a heavy loss.

To turn to the opposite form of speculative transaction, suppose now that the dealer expects such large supplies to be placed upon the market at a future time that prices are likely to fall. The order of events becomes the reverse of that noted above. The dealer endeavours to get rid of his stocks immediately. So do all the other traders who foresee the impending drop in prices. The result is to cause an immediate reduction in prices, not so considerable as was anticipated at the future date, but sufficient to set up reactions in the forces of demand and supply. The fall in prices stimulates consumption and discourages production. In consequence stocks are exhausted more quickly than was anticipated, and prices in the future therefore are not so low as was at first predicted.

Many speculative transactions are, of course, much more complicated than those which we have described. For instance, dealers may contract to sell goods which they do not yet possess—which may not as yet be in existence. They conduct their business on the assumption that, between the date of the agreement and that of delivery, prices will have fallen sufficiently to yield a profit on the deal. Conversely, they may contract to buy goods which have still to be produced in the hope of re-selling them at a higher price level. Such transactions, provided that they are carried out by skilled operators who know their markets, can be advantageous in so far as they smooth out fluctuations in the prices of particular goods. They cannot altogether prevent variations, for there are many other circumstances affecting market values, but they may contribute to bring about a certain degree of stability.

Defects of Speculation

If nothing but these results accrued from speculation, there would be no justification for the disrepute that attaches to the practice. In actual fact the term covers a wide number of activities, ranging from genuine and beneficial enterprise at the one extreme to sheer gambling at the other. The success of a skilled operator in the market tempts others to follow his lead, but, unless they possess similar knowledge and intuition, they are more liable to lose than to gain. If they alone were the sufferers, the rest of the world could afford to look on with equanimity, but in practice a few serious failures often reverberate throughout the business community, causing difficulty in distant and unexpected quarters. Dealers who have contracted with manufacturers for the production of a large quantity of goods may find themselves unable to meet their commitments when the date for payment arrives. In the attempt to raise ready cash, the goods may be thrown on an already sluggish market and prices collapse, bringing ruin, perhaps, to numerous other businesses that have played no part in the speculative ventures.

The presence of amateur speculators serves to make the situation even worse. If the cleverest of dealers are apt to make mistakes, the chances of outsiders making continued large profits are very remote. For a time, it is true, they may do well, but their success may lead them and others to plunge even more deeply. In the end the majority of these speculators may find that they have lost their money, and have upset the delicate adjustment of the commercial organization into the bargain.

It is the interdependence of the modern economic world that makes injudicious speculation so dangerous. Even where acute competition prevails, there is a certain unity in the common desire for trade stability. An ever-increasing proportion of the world's goods is being turned out in anticipation of demand. This practice is beneficial to all classes of the community in that it keeps up an even flow of production and regularizes employment. But it is beneficial only so long as economic conditions are comparatively stable. Genuine speculation, as we have shown, tends to promote this well-ordered adjustment of demand and supply over a long period, but dealings based on faulty anticipation of market conditions may work havoc. Stocks may be produced considerably in excess of actual requirements. Plant may be extended and then have to be idle for months or years. To the loss of all the labour and capital that have gone into the production of these things has to be added the still more serious waste entailed by subsequent unemployment and its cumulative effects.

SECTION 24

MONOPOLY PRICE AND DEMAND

THERE is no fundamental difference between the principles governing price under competition and monopoly respectively. The power of the monopolist is limited to some extent by the elasticity of the demand for his goods, and in practice he does not always charge that price which, in theory, would yield him the maximum net revenue. He has the advantage of being able to discriminate in his charges as between different places, different demands, and different times.

COMPETITION AND MONOPOLY

UNTIL now, in our discussions on value, we have been assuming that exchange takes place under strictly competitive conditions. In practice, however, as we have already intimated, perfect competition is very rarely attained. On the side of supply, there is frequently great ignorance among producers of their rivals' activities. There is a certain immobility of labour, and, to a smaller extent, of the other agents of production. The growing necessity, in many industries, of a large and expensive plant tends to restrict the entrance of new rivals and thus to weaken the force of competition. Also, on the side of demand, purchasers are not always so well informed as they might be, while their orders are to some extent influenced by custom and habit. These and many other circumstances often prevent the perfect adjustment between supply and demand that abstract reasoning suggests.

When we describe an actual system as competitive, we refer merely to its dominant characteristics, and do not imply that it is free from disturbing and frictional influences. Similarly, when we refer to an organization as monopolistic, we do not necessarily envisage a complete control over supply or demand to the exclusion of all competitive forces. Perfect monopoly is as seldom encountered as perfect competition. To designate the whole of the economic activities of a nation as competitive or monopolistic is liable to be very misleading. Even in the last century, which is supposed to have been the heyday of individualism and free enterprise, associations and combinations were by no means unknown, nor would any, except the extremists of the individualist school, have denied that, in certain departments of economic activity, some degree of unified control was indispensable.

Just as there is no definite division between the systems of competition and monopoly, so there is no essential difference between the principles determining price under the respective systems. In dealing with monopoly price we place more emphasis upon some factors and less on others, but the fundamental forces are the same. The principles of value have so far been considered in relation to competition, because it was under these conditions that they could, to begin with, be best formulated and understood, but they can be applied, with only minor modifications, to conditions of monopoly.

MONOPOLY NET REVENUE

Whereas the competitive trader has the price determined *for* him by the interplay of supply and demand, the monopolist has a more direct voice in fixing the price of his goods. This does not mean, of course, that he charges the highest possible amount, for the demand at that figure may be so small as to cause a serious shrinkage in his profits. He endeavours to fix the price at such a point at which, having regard to the demand and his costs, he secures the maximum net revenue. To charge a higher or a lower price would in either case reduce his profit.

In practice, however, the monopolist does not always fix his price at this point. In the first place, he may be ignorant of the particular price which would work out to his greatest advantage. At the outset of his monopolistic policy he has to decide, more or less arbitrarily, what the price is going to be. The minimum is set by his cost of production, including a return for wages of management, but he is at greater liberty than competitive producers to settle the price appreciably above the unit cost. Once he has fixed upon a price, and has entered into business undertakings on that basis, there is a tendency for him to adhere to that figure, especially if it works out greatly to his profit. He may ponder over the possibility of raising or reducing the price, but great uncertainty attaches to either alternative. To raise the price might cause such a falling-off in sales, not to mention the likely difficulty with his customers, that he decides against the project. To reduce the price, he imagines, might not greatly stimulate the demand, and then it would be an irksome task to restore the price to its former position. And yet it might be that one or other of the alternatives would, if carried out, increase the profits of the monopolist. But, in the absence of full knowledge of the elasticity of demand, and since in most branches of business it is impracticable to experiment with a number of prices until the most remunerative figure has been ascertained, there is always the possibility that the actual and the most advantageous monopoly prices do not coincide.

Secondly, the price under monopoly conditions tends frequently to be expressed in "round numbers," although it is possible that a fraction above or below would result in a greater profit. This applies more to retail than to wholesale trade. The wholesaler is accustomed to dealing in fractional values, and prices are, in fact, more immediately responsive to changed conditions in supply and demand. In retail trade, prices are more stable. A slight alteration in manufacturing costs, whether under competition or monopoly, does not necessarily manifest itself in an increased or diminished price to the purchaser. Custom, too, plays an important part. A new novel sells at the usual price of 7s. 6d., although 7s. or 8s. might, in fact, be found more profitable. The publishers, who hold the monopoly, fall in with the customary practice. Whether the work is written by an author of repute, and is likely to sell in tens of thousands, or comes from the pen of an unknown writer, who will be fortunate if as many hundreds are sold, the monopoly price will, for the time being at any rate, be the same for both.

Conditional Monopolies

Thirdly, as we pointed out when describing this form of organization, a monopolist may deliberately choose to ask a lower price than that which the circumstances of the moment warrant. Though he may, from a sense of public duty, decide upon a modest figure in order to give a wider section of the public the benefit of his products or services, instances of this kind are not numerous. More frequently the monopolist who adopts this policy does so because of latent competition that is liable to spring to life if the price is raised. He may hold his position only because of superior methods or other advantages, which enable him to undersell all his would-be rivals. To increase his charges is but to invite competition. The position depends partly upon the character of the industry. If it is one that requires a heavy initial outlay of capital, rivals will not be too eager to enter the field, particularly if the monopolist is liable to drop his prices again under the altered conditions. If, on the other hand, production can be begun with but a moderate outlay, competition can more readily become effective, and therefore the monopolist is not likely to experiment with higher prices.

Further, even if the monopolist does not fear the entry of rival firms, he has to take into account the possibility of a substitute for his product. A substitute may not serve a particular purpose as efficiently as the monopolized commodity, but, if its price is much lower, this advantage may discount its inferiority in use, and attract a considerable number of buyers. The number of articles that are in wide and necessary demand, and are immune from the competition of substitutes, is very limited. Radium, for example, possesses unique properties, and the monopolists who control the world's output can, for the present, afford to ignore the use of substitutes. But fortunately this form of monopoly is very rare.

Thus, the prices that the above forms of monopoly charge are conditional upon circumstances over which the sellers have no complete control. Their powers are limited to a greater extent than is sometimes supposed. Another form of monopoly, one in which the price-fixing powers are still more curtailed, is exemplified by the railways and public utility undertakings. The maximum charges of such concerns are rigidly controlled by the public authority. Competition in such services—for instance, in the supply of water—would be altogether wasteful. As a condition of the monopoly rights granted to the companies, the public authority is vested with the power of supervising the charges that are made for the services.

PRICE DISCRIMINATION

The argument so far has proceeded on the assumption that the monopolist charges a uniform price for his goods. One of the important differences, however, between competitive and monopoly conditions is that the monopolist can, to a larger extent, discriminate in his charges according to the market in which he is selling. In one quarter, the demand for his goods may be fairly inelastic; in another, elastic. Under competition the same price is likely to rule in both quarters, but under monopoly the prices can, with certain limits, be adjusted to the demand of the respective consumers.

Price discrimination by monopolies can take several forms. The best known is the charging of different prices in different areas. Provided that the areas are sufficiently large, the possibility of re-sale by the favoured customers is not serious, especially if the differences in the prices are inconsiderable. A country may be divided into selling zones, each district having a uniform rate of charge. More effective, and permitting of a much greater variation in prices, is the splitting-up of a world market into national zones. A producer may have a monopoly at home, but have to face competition abroad, and therefore may charge customers in his own country higher prices than he quotes to foreign buyers. He is especially likely to adopt this policy if he wishes to enjoy all the economies of large-scale production, yet finds that the output on this scale is more than sufficient to provide for the home market at the most advantageous price. He may sell the balance of the goods abroad at any price he can get—lower perhaps than what the unit cost would be if he were manufacturing in smaller quantities, and lower than the cost in the foreign country. Hence the practice of "dumping," to which further reference is made below.

Secondly, the monopolist may discriminate between different types of demand in the same place. It is not an easy matter to differentiate between one individual consumer and another, but it is quite practicable to do so between one kind of demand and another. Thus an electricity supply monopoly charges the householder a higher rate than the factory owner and provides differential rates for the householder according to whether he uses the supply for heating and cooking, or for ordinary lighting.

A third form of price discrimination takes place over a period of time. A monopolist may begin by charging comparatively low prices. The motive may be either to make sure that competition is thoroughly removed, or to get the consumer habituated to the use of the product. Perhaps the customer has to incur some initial expense before he can utilize the product, and it is not to the advantage of the monopolist to charge high prices right away. For instance, before a person can become a customer of an electricity supply company he has to go to the expense of installing the necessary cables and equipment. But, once he has been persuaded to incur the cost, the company can raise its charges for electricity, knowing that he will be unlikely to give up his custom.

It may be, on the contrary, that a monopoly starts off with a high price, and then successively drops to lower prices. The object may be to tap the different layers of demand in such a way and at such times as to secure the greatest profit. We mentioned above that a newly published novel sells at 7s. 6d., although this sum does not necessarily bear any exact relation to its cost of production. After a time, however, when most of the readers who are likely to pay this price have purchased copies, the book may be issued in slightly inferior binding and paper for less than half the original price, and eventually it may sell for an even smaller sum. At each stage a new level of demand is reached. This policy is often found more remunerative than that of selling at a constant figure from the start.

There is, finally, the form of monopoly price-fixing, which is the exact converse of the methods that we have been describing. A concern that has complete control over supply may have a flat rate of charge for its services, although, if these were provided on a competitive basis, they would be priced at considerably different levels.

The Post Office, for example, charges the same rate for carrying a letter or parcel, whether it is taken a hundred yards or a hundred miles. This method of price-fixing depends for its success on complete monopoly. Competition, even in the remotest quarters, might necessitate differential charges to meet the special or local circumstances, and ultimately lead to the abandonment of the flat-rate principle.

SECTION 25

MONOPOLY PRICE AND SUPPLY

The price policy of the monopolist is influenced to some extent by the nature of his unit costs. Under conditions of diminishing costs and elastic demand, the price is likely to be low, but under those of increasing costs and inelastic demand the price is liable to be high. The railway services furnish good examples of price-fixing under conditions that are partly monopolistic and partly competitive.

MONOPOLY AND UNIT COSTS

The relationship between costs and monopoly price may be examined under four chief heads: (*a*) where the costs are negligible, possibly nil; (*b*) where the costs are a constant amount; (*c*) where the costs diminish as output increases; and (*d*) where the costs increase as output increases. Under each head the question turns further on the elasticity of the demand.

Consider first the position where the cost of production is so small that it can, for practical purposes, be ignored. A man may accidentally discover a number of unique treasures, for which, let us suppose, there is a certain, though by no means widespread, demand. To throw the whole of the find on the market would undoubtedly result in a lower price per article than to offer for sale only a portion of the stock. The task of the seller is to determine, if possible, whether the whole of the stock at a smaller price per unit would yield a greater profit than a part of the stock at a higher price per unit. The finder might conceivably destroy or, at any rate, stow away a considerable proportion of the goods in order to obtain high prices for the remainder. Destruction of stocks is not unknown even under competitive conditions; it is still less uncommon under monopoly. What now concerns us, however, is the fact that, under these conditions, there is no question of cost affecting the most remunerative price.

Consider now the much more likely circumstances in which the supply does not originate in the manner of treasure trove, but entails some outlay on labour, capital and other requirements. The task of the seller is to estimate the price, and the attendant amount of business, that will leave the largest balance after expenses have been met. If the unit costs remain constant, irrespective of the volume of production, the price-determining conditions are the same as those which we described in the previous section. The governing factor is the elasticity of the demand. The fact that the production of the goods involves some effort and sacrifice will cause the supply to be more carefully controlled from the outset than is likely where the costs are very small. Destruction of stocks, rare though it is in circumstances of negligible costs, will be even rarer when production involves material expense.

Variable Costs and Monopolist Policy

Suppose, however, that, as is much more probable, unit costs vary with output. Diminishing costs, being the most common, may be considered first. Though the monopolist is naturally anxious to obtain such economies as are practicable from production on a large scale, he has to keep his eye all the time on the demand, and to aim at that volume of output which, having regard to all circumstances, yields him the greatest revenue. A small increase in his output beyond a given amount may result in a greater fall in price than in unit costs. Or, on the other hand, a slight drop in price may be more than compensated by a resultant reduction in production costs.

Where the demand is very elastic, the monopolist may find it advantageous to charge a low price for his goods—as low perhaps as would prevail if competition were the rule. Indeed it is possible that the price would be even lower than under competition, for the monopolist has advantages of co-ordinated production and large-scale organization that could not be enjoyed in the same degree by a number of smaller firms. The price under these conditions depends very largely upon the responsiveness of the demand to a moderate scale of charges. Where, however, the demand is fairly inelastic the monopolist, notwithstanding the gains to be obtained from production on a large scale, may prefer to sacrifice the economies and recoup himself by charging high prices to the consumers.

Or, if his products have a foreign market as well, he may attempt to secure the double advantage of producing in large quantities at a low unit cost, but selling only a portion at home at a high price, and disposing of the surplus abroad at whatever prices are obtainable. The firm that has a monopoly at home may have to face severe competition in the world market, and therefore have to adjust its prices accordingly. The practice of a monopoly charging its foreign customers less than its home customers, in spite of the greater transport costs involved, is by no means uncommon. The policy causes resentment, not only among the home consumers, but also among the producers in the foreign country, who complain against what they deem to be unfair competition. Many firms, however, that enjoy a monopoly in the home market have such large sales in the competitive market abroad that they are unlikely to regard their foreign customers merely as conveniences in taking the "surplus" stocks, at sacrifice prices, off their hands. Such a policy would hardly be to their permanent advantage.

Finally, there are the conditions under which the goods are, after a certain point, produced at increasing costs. The monopolist who has reached this stage is naturally not anxious to extend his production further unless the market conditions specially warrant such a decision. Again the determining factor is the elasticity of demand. Should the demand be very sensitive to reductions in price, the monopolist, once the point of least unit cost had been passed, would have to estimate whether increased sales at lower prices and higher costs would yield a greater or a smaller net revenue than diminished sales at higher prices and lower costs. If a change were to be made, there would be a greater likelihood of the price being raised than diminished. Should the demand be inelastic, the chances of the price being kept high would be even stronger. A comparatively small output would suit this monopolist's purposes admirably, for his unit costs would be kept low while the selling price was maintained at a high level. If the article were one that the community urgently required, the position would become very serious, and call for control would become insistent.

A Practical Illustration of Monopoly Price-Fixing

Before bringing the account of price-determination to a close, we may illustrate the chief tendencies that have been described by reference to the transport industries, the railways in particular, in which the element of monopoly is very strong, though far from complete. Any other group of industries could be chosen for our purposes, but the factors helping to fix railway rates will serve to exemplify some of the exceedingly complex forces that are encountered in actual practice.

The degree of monopoly in railway services is not so powerful as it used to be, and, with the growth of road transport, important modifications have been rendered necessary in the theory of prices as applied to railway charges. The conditions, however, partly monopolistic and partly competitive, are still unique in many respects.

The several types of supply on which we have previously commented are all to be found in the railway services. Conveyance is afforded both for passengers and goods, and the respective costs cannot, of course, be studied apart. Instances of joint supply are to be found in all directions. In making provision for carrying certain types of goods, the railway company almost inevitably gives facilities for other kinds of freight. In linking up distant places it also connects all the localities on the route. It has its own motor-coach and steamship routes, not to mention its hotels, refreshment rooms, and numerous other services.

There may be competition with another railway line serving a particular area; or it may be with the road services or with the waterways, according to the character of the things conveyed and to the district covered; or it may be with the privately owned means of conveyance, particularly the motor-car, the growing use of which must have a considerable bearing on the scales of passenger fares. For these and other reasons the demand for railway services is not so inelastic as it used to be. Further, the principle of diminishing costs, as we have previously observed, is of first importance in railway price-fixing. The overhead charges are so considerable, and bear such a large ratio to the total, that special additional facilities can be provided at a less than proportionate cost. The comparative elasticity of the demand, coupled with the diminishing ratio of cost, often results in rates of charges appreciably below the maximum schedules imposed upon the railway companies by the public authority.

In the popular phrase, railways "charge what the traffic will bear." Owing to the widely different nature of the freight, they cannot have a uniform rate of so much per hundredweight or per cubic foot. To charge for the carriage of silverware and cement on the same unit basis would be absurd. Either the fixed rate would be so high that the cement manufacturer could not afford to send his goods by rail, or it would be so low that the silverware manufacturer would escape with a much lighter charge than he could really afford to pay. The common-sense method is to have differential rates, according to the ability to pay of the respective consignors, but for it to be carried out successfully monopoly of the whole service is an essential condition.

SECTION 26

THE VALUE OF MONEY

Changes in general, as distinct from relative, values are largely bound up with changes in the value of money. General prices tend to increase with the amount and efficiency of money in circulation and to diminish with the volume of trade.

Relative and General Values

The theory of value, as ordinarily stated, is concerned with the power of exchange of one commodity for another. This power varies with the degree of costs and utilities respectively attributed to the commodities in question. Thus, for example, a pint of milk is said to have the same value as a pound of sugar because their marginal costs and utilities, as measured in common terms, are at the same level. But, although these relative values may remain unaltered for a long time, the prices that have to be paid for them may show a marked change. It is a commonplace that prices have fallen considerably in the past decade but that relative values have not changed to anything like the same extent. A pound of butter may have the same relative value as a pound of tea, though the market prices have appreciably declined. If the forces of price-fixing were perfectly free, relative values would be even less affected, notwithstanding a general drop in market prices. Frequently, however, suppliers of certain commodities have been able, owing to their advantageous bargaining position, to prevent their prices from falling at the same rate as the rest. It has, for example, been a common complaint that wages in "sheltered" industries have not been permitted to fall so as to keep pace with the average price level.

In this section we shall inquire into the reasons for changes in general prices unaccompanied by changes in relative values. Price has been defined as the monetary expression of value, and it is in the nature and quantity of money in circulation in relation to the volume of production that the explanation is to be found.

Money, as commonly understood, fulfils the purposes of a standard of value and a means of payment. It is a medium in which the values of all other commodities are expressed, and which makes direct barter unnecessary. Many writers have enlarged on the qualities that a good money material must possess: that it must be stable in value, that it must have a high utility in small bulk, that it must be cognizable, divisible, indestructible, homogeneous, and so on. In the days when standard money—in this country, the gold sovereign—was in general use, several of the above attributes were more important than they are now. It is not of great consequence at the present time, when most of us handle token coinage and paper currency only, whether the standard material is easily recognizable, or whether it conforms to most of the other conditions mentioned. What concerns us most is whether the unit chosen to measure the values of other commodities has a stable value itself or whether, since even gold is not free from defect on this score, its supply can be so regulated that any tendencies for its value to fluctuate can be effectively checked.

The advantages of steady prices are too well known to need lengthy reiteration. When prices are falling they benefit those with fixed money incomes, but are harmful to manufacturers and others who have to sell at a lower level than that prevailing when they bought material and engaged labour. Rising prices are prejudicial to those whose incomes are fixed, but are a boon to those who sell their products at a price level that keeps ahead of their costs. The former position tends to restriction of activities and to general depression; the latter tends to over-sanguine estimates of the community's needs, to speculation and over-production. It is not denied, of course, that in certain circumstances a moderate fall or rise in prices may prove to be for the common good, such as, for instance, a fall due to technical and administrative economies in production, or a rise that acts as a healthy stimulus following a period of too low prices. But on the whole stability of prices is found to be the most advantageous, and a necessary condition, pending the time when it may be possible to "manage" the entire currency system, is that the medium chosen as the standard should have a high constancy of value.

THE QUANTITY THEORY

Though money is, in a sense, a commodity like any other, it has this peculiarity, that the real service that it renders does not increase with an addition to money supplies nor diminish with a contraction in money supplies. (In speaking of its service we refer, of course, to its monetary function, not to the utilities it might be capable of providing if the material itself were consumed.) The primary function of money is to enable goods to be evaluated in common terms and to be exchanged indirectly for each other. Double the money in the possession of an individual and he will consider himself twice as well off as before, for he will now be able to purchase twice as many commodities as he formerly enjoyed. But double the amount of currency in an entire community and there will be no increase on that account alone in the amount of wealth for the benefit of the population as a whole. Under the simplest conditions all that will happen will be a rise in prices to balance the increased quantity of money in circulation. People will have twice as much money to spend but no more goods to buy. There will be less work, so to speak, for each unit of money to perform, and more units than before will have to be offered for the now relatively scarce consumable goods. Conversely, if an individual's money supply is reduced by a half, he will be to that extent worse off than before, but if the total currency in a community is reduced in this proportion there will be no necessary contraction in the total wealth to be purchased. The citizens will find that each unit of money, which is rendered scarce in relation to goods, will now buy more. General prices will tend to drop following a reduction in the quantity of money, just as they will tend to rise following an increase in its quantity.

PAPER MONEY

This bald statement of the "quantity theory," however, has to be modified in a number of ways before it can be accepted as a true statement of the relationship between money and prices. "Money" is a comprehensive term—more so than the authors of the above theory in its crude form were apt to realize. A good deal of modern exchange is effected by means of paper currency. In so far as the notes are simply representative—that is, fully backed by coin or bullion—they do not add to the effective money supplies, and have no bearing on the price level. While they are functioning as money, the gold (or other metal) that they represent is withheld from circulation, and when they are exchanged at the bank for cash they are not issued again. But all paper money, of course, is not fully representative. Much of it is backed, not by specie, but in effect by the credit of the issuing body. Such paper money has more or less the same effect on the demand for goods, and therefore on general prices, as the other notes that are fully backed by coin or bullion. A fiduciary issue, therefore, increases the aggregate volume of purchasing medium and tends to send up the price level.

Fiduciary paper money need not be inconvertible. It is well known that only a certain proportion of notes is normally presented for cash at any one time, and that so long as the confidence of the public is maintained, only a portion of the gold need be kept immediately available for this purpose. An issue of fiduciary notes, provided it is carefully regulated, need not upset a country's monetary system, though, as we have explained, there will be a tendency for the general price level to rise together with the increase in the total money supply. But if the proper limits are over-reached and the paper money becomes inconvertible as well as fiduciary, the credit of the issuing body is liable to suffer, and people will be disinclined to hold more of this paper money than they actually need. Its power of exchange for goods will tend to diminish in still greater ratio than its own nominal increase, or, in other words, there will be a liability for prices to go up in much greater proportion than that of the inconvertible paper put into circulation.

CREDIT AND RAPIDITY OF CIRCULATION

Important as is paper money in our system of exchange, the quantity of business transacted by means of cheques and similar credit instruments is still greater. The use of credit does not necessarily swell the total supply of money and materially raise prices on that account, for it may merely have the effect of postponing the use of standard money in paying for goods. Under such conditions there is for the time being a greater demand for commodities and a tendency for prices to rise, but subsequently the credit is in effect replaced by ordinary money, and the money so employed reduces the quantity available for transacting other business. The tendency in the short run for prices to rise may thus be balanced by that in the long run for prices to fall. In this limited sense, therefore, the effect of credit on prices is inconsiderable.

But most credit nowadays does not take this simple form. Nearly all credit instruments at the present time are of such a kind, and the means of settlement are so devised, that the need for standard money even in the long run is practically dispensed with. Bills of exchange pass from hand to hand, and facilitate exchange as efficiently as ordinary currency—and in international dealings even more so. The volume of business carried through by means of cheques is now prodigious, and the device of clearing houses enables the claims in the banks to be offset against each other without resort to ordinary currency. The relatively small balances standing to the credit or the debit of the clearing banks are dealt with by adjustment of the respective accounts at the central bank, and thus the need for standard money is even further reduced. An ever-growing proportion of the country's business is carried out in this fashion, and the formula of the quantity theory has necessarily to be so qualified as to allow for credit instruments in the amount of effective money in circulation.

A further modification has to be made so as to allow for the rapidity with which the units of money, whether standard or otherwise, pass from hand to hand. A coin that is spent twice in a given period evidently is doing twice the work, and will tend to exercise twice the influence on prices, as a coin which is spent only once. A bill or a cheque may go through a number of hands before it is finally presented for payment. Money circulates more rapidly in an industrial than in an agricultural area. The amount of effective purchasing medium is thus determined, not only by the actual quantity at a particular time, but by the frequency with which it is employed.

On the other hand, a certain amount of currency is hoarded, or allowed to lie dormant for considerable periods, and to that extent ceases to be effective money and diminishes the amount in circulation.

VOLUME OF TRADE AND DEMAND FOR MONEY

In so far as the goods themselves come into the market more than once, a counter-force is set up, and prices may show a tendency to fall. It is as true to say that goods buy money as to say that money buys goods, and anything that increases the effective supply of the one in relation to the other necessarily affects the money value. It is not customary, however, for ordinary commodities to enter into exchange more than once, with the result that rapidity of circulation serves to influence prices more from the side of money than from that of the goods bought.

The volume of trade as a whole, however, may so increase, and thus swell the demand for money, that the counter-tendency for prices to fall is strengthened. During the past hundred years the quantity of effective money has grown enormously. Gold mines have been discovered, cheques and bank notes have multiplied, while the circulation of money has become more rapid. Had not the volume of production kept pace with the supply of money (except during the War and post-War period of inflation) the level of prices would have been considerably higher than it is now.

But it is, of course, unlikely that the quantity of money would have been as large had not the demand for it increased as well. Changes on the one side of the equation are largely the outcome of changes on the other. Increases in credit, for example, are granted usually in the expectation that production will be increased, and the price-raising tendency of the one may be offset by the price-lowering tendency of the other. New gold supplies come in a different category, for they enter into circulation without a corresponding or necessary expansion of goods demanded, and, as the experience of the nineteenth century amply illustrates, are almost invariably followed by upward price movements. Though the supplies of gold are constantly increasing in actual amount, the demands on them in different countries appear to be growing in even greater ratio, and the relative scarcity of gold is claimed to be a powerful factor in the marked drop in world prices during recent years.

PART III

INCOMES FROM LABOUR AND PROPERTY

SECTION 27

THE SOCIAL INCOME

THE problem of distribution is in some respects more complicated and apt to be more controversial than that of production and valuation. The subject can be studied both in its functional and in its personal aspect. It is necessary, first, to have some knowledge of the total value of the social product, and several investigations, official and private, have been undertaken to that end. It is helpful, too, to have particulars of *per capita* incomes. In computing the social income there are several items that cannot be reduced to exact money terms, and are liable, therefore, to be omitted.

THE DISTRIBUTION OF INCOME

OUR inquiries until now have been confined mainly to the manner in which goods and services are produced, and to the principles governing their valuation for purposes of exchange. The investigation, however, is far from complete. The student of affairs wants to know, not merely how much is produced by a community, but how it is distributed among the different parties who, directly or otherwise, have participated in the process.

A general survey of the industrial and social situation at the present time shows that the problem of distribution underlies much of the agitation that is going on. This is not to suggest, of course, that all is well with production, and that there is no cause for criticism on this score. The increased interest in industrial organization, rationalization and unification is ample evidence of the attention that is being given to an improved economy in the industrial structure. But, however much the administration and technique of production are advanced, the deeper question of distribution still remains. The perpetual discussions on the subject of wages, dividends, unemployment, hours of labour, taxation, and so forth all turn upon this central problem.

Distribution did not always occupy the centre of the stage. In the early days of economic activity, when division of labour was unknown or in its infancy, the apportionment of the product was a comparatively simple matter, for, apart from feudal dues and similar obligations, the individual producer, working with his own simple capital implements, retained the whole of his product for his and his family's use. He employed no hired labour, and therefore the question of wages, in the modern sense, did not arise. He borrowed no capital, and therefore no payment of interest was called for. He cultivated his own land, and therefore no rent, as we now know it, had to be paid. Profits of enterprise, in the modern sense, were practically unknown. It is true that there were often great hardships, and that the total income, such as it was, was very unequally distributed. Actually the mass of the people were worse off than they are to-day. But the economic basis of the structure in those days was very simple, and the distribution was accordingly of an elementary type.

In the course of time the economic organization became more complex, and the method of distribution more involved. The descendant of the early producer began to employ labour, borrow capital, and hire land. As production and exchange grew more intricate, the method of distribution became more difficult and contentious. Goods now passed through numerous processes in the course of production, and at each stage there arose distinct groups, each with its batch of claimants for a share of the proceeds.

FUNCTIONAL AND PERSONAL DISTRIBUTION

The conventional and certainly the easiest way of dealing with distribution is to treat the subject on parallel lines to the study of production. Just as the several factors are taken in turn, and their parts in the productive process studied, so the rewards that are paid in respect of each of these agents are first separately, and then collectively, considered. Hence it is customary to inquire into the wages of labour, the profits of enterprise, the interest of capital, and the rent of land. Some writers independently classify the portion of the social income that is appropriated in the form of taxation by the public authorities. While this category is hardly analogous to the others, for it is composed of funds that are already covered by the previous heads, the presence of taxation cannot be ignored, for it exercises a profound influence on the final apportionment of income.

Though the *functional* treatment of distribution is the one usually adopted, the deficiencies of this method should not be overlooked. The obvious drawback is that there is in practice no clear-cut division of the people into groups corresponding to the several factors of production. Though the wage-earners as a class are associated with labour, they provide in these days of joint-stock organization a certain proportion of the capital. A man may draw most of his income from capital investments, but personally furnish labour as well. Similar overlapping is found between wages and profits, profits and interest, interest and rent, and so on. Doubtless there are numerous people who derive their income from all four sources. Thus the *personal* treatment of distribution, for which there is much to be said, cuts across the classification on the functional basis. It is, therefore, very difficult to classify the people according to income in clear and well-defined categories. One can, of course, show that a certain proportion of the nation receives a certain percentage of the total income, but such ratios are of little help in understanding the source and composition of the respective shares. On the other hand, to say that a certain percentage is paid out annually in dividends or investments cannot be taken to mean that a particular social group represents the sole beneficiaries. Both methods have their limitations as well as advantages, and to employ one to the exclusion of the other is unlikely to yield an accurate analysis of the situation.

THE CENSUS OF PRODUCTION

But, whatever method is adopted, it is essential first to get some idea of the aggregate product that is to be shared out. For ordinary purposes the national product and the national income may be regarded as synonymous, although, as we shall show later, the differences may be sufficiently important as to require some modifications. The task of estimating the aggregate income of a nation is extremely complicated, and there is a certain difference of opinion over the proper course to pursue. On the question of comparing the incomes at different dates, during which price and other changes may have taken place, there is even greater diversity of thought.

Before we deal with the actual methods and difficulties, however, we may briefly note the main conclusions that emerge from the official Census of Production. Among the information required of producers throughout the country are particulars of the gross selling value of each firm's output, and the value of the raw materials consumed, from which is obtained the net value added by manufacture in the course of the year. It was ascertained in the Census of 1924 that the value of the gross output amounted to £3,853·1 millions, which, after making the necessary deductions for materials, etc., was reduced to £1,697·5 millions. To this amount many additions had to be made, such as the value of agricultural, fishery and forestry output that was not used as industrial material, the value of final consumption goods imported from abroad, the cost of transport and trading services, together with the value, so far as it could be expressed in terms of money, of the usage of private properties of railway and road passenger services, of the services of professional workers, etc. On the other hand, deductions had to be made in respect of exports to foreign countries, depreciation, etc. The outcome of the calculation was that the total net product of this country in 1924 was approximately £3,975 millions, subject to a margin of error of not more (probably much less) than 7 per cent on either side.

The outstanding inquiry undertaken by private investigators has been the work of Professor Bowley and Sir Josiah Stamp, who have published their calculations and findings for the same year. They estimated that the income originating in the United Kingdom (not Great Britain as in the official Census) amounted in 1924 to £4,008 millions. Making the necessary allowances for exports and imports, and for internal transfers, on which something will be said below, they came to the conclusion that the net social income of the country approximated to £3,803 millions. Having regard to the different scope and the different methods of inquiry and calculation, we may for our present purposes disregard the difference in the final results.

General prices have, of course, declined considerably since 1924, causing a corresponding reduction in the money value of the national income. This in itself would be no cause for apprehension were it not for the serious contraction during the years of depression in the physical volume of the wealth produced.

THE CALCULATION OF THE SOCIAL INCOME

It must be realized that the above figures are estimates rather than actual measurements, and that some latitude must therefore be allowed in applying them. But, quite apart from the task of obtaining precise information on every desired point, there are the preliminary questions of the form that the calculation should take, of what ought to be included and of what ought to be excluded. The most obvious difficulty is to avoid double counting. There are many kinds of individual income which cancel out in the total, and for which the necessary adjustment must be made in the computation of the net product.

Suppose, for example, that a man, earning a net income of £1,500 a year, employs a chauffeur at a wage of £150, and makes an allowance of an equal amount to a son at college. The income of these three people, if taken individually, might be said to be £1,800, but it requires little proof to show that such a conclusion would be fallacious. The son's income is nothing but a transference from the father's, and it would be incorrect therefore to add them together. The chauffeur's income, on the other hand, although it comes from the same source, must be treated differently, for it is the reward of a specific economic service that he renders. It cannot be emphasized too much that what really matters in computing the net social income is the value of the actual goods and services produced during a given period, and not the sums of money that pass from hand to hand. It may be true that the chauffeur is employed largely for pleasure trips, and that the son is taking advantage of the allowance to equip himself for useful service in later years. If we were regarding the national income from another point of view, we should have to take such considerations into account, but for purposes of the present calculation they can be ignored. The fact that concerns us now is that the employer, who earns £1,500 a year, and the chauffeur, who receives £150 for his labours, produce between them £1,650 worth of goods and services. However reproductive the college expenditure might turn out to be at a later date, the son makes no addition to the collective product during the years of training, and therefore his income cannot properly be included in the estimate for that period.

The same argument applies to the community as a whole with even greater force. A very large proportion of individual incomes consist of transferences from one section of the people to another, or from the taxpayers in general to certain beneficiaries, with no corresponding economic service during the period directly concerned. The payments of interest on the National Debt are the largest item under this head. To include the dividends going to Government stockholders as well as the incomes of the taxpayers from which the amounts are drawn would be unsound. Otherwise it would mean that, the greater our debt obligations, the greater would be our national income. The interest is being paid on wealth that has been dissipated in the past. Whether the heavy capital expenditure was necessary in the economic interests of the nation is beside the point. Possibly some would maintain that the outlay was indirectly remunerative in that we might have been much worse off now if the money had not been spent, and that the national income at the present time contains, in effect, some portion that is traceable to this supposed capital expenditure. But even if there were any truth in this contention, it would be quite an impossible task to ascertain the return from an "investment" of this character. It is safe to assume that the interest and principal payments on the National Debt, which is almost entirely attributable to wars, represent no economic service at the present time and therefore should not rank for inclusion in the estimate of net income. Payments of this kind coming from abroad should, of course, be reckoned, for, although there is no specific service to set against them, as judged from the standpoint of the nations together, they undeniably add to the income of the recipient country, just as if they were the proceeds of international trade and investment. And, conversely, net payments to foreign countries should be deducted from the gross total.

The same treatment has to be applied to other internal transferences, of which there are several kinds. Public pensions, to mention but one type, should not be included in the net total, since there are no services during the current period to correspond. However deserving the beneficiaries may be, they have earned their rights by their labours or sacrifices in the past. At the time of receiving their pensions they are contributing no specific product, and the payments therefore come from the pockets of other people, whose incomes have already entered into the calculation.

We are now in a better position to understand how the final estimates of the national product were arrived at. To take the findings of Professor Bowley and Sir Josiah Stamp, for instance, their calculation proceeded in the following manner. First, the income originating in the United Kingdom was reckoned to be £4,008 millions. To this was added £212 millions in respect of income from abroad, and from it was deducted £56 millions in respect of home-produced income going abroad. The total gross income, therefore, worked out at £4,164 millions. The internal transferences, however, on account of debt services, amounted to £361 millions, after allowing for which the net social income came to £3,803 millions. This amount represented the net total available for distribution among the several sections of the community.

PER CAPITA PRODUCT

Besides the total amount that is available for distribution in a given year, it is useful also to know any changes on a *per capita* basis that may have occurred over a period of time. The caution should be borne in mind, however, that the official statistics do not afford an adequate statement of the position, especially when employed for comparing one period with another. There are many factors, as will become increasingly evident as we proceed, that materially affect the wealth and welfare of the nation, yet which find no place in the ordinary returns.

If, for instance, the findings of the Census of Production of 1924 are set against those of the similar inquiry of 1907, and are adjusted by means of the official index number of prices so as to allow for the changes in the purchasing power of money, the results are not very cheering; for they would show that, despite the discoveries of new resources and the considerable improvements in the methods of production during those seventeen years, the real income per head of the population actually declined by 3 per cent. The losses of the War, it may be admitted, had a certain retarding effect, but they were to a large extent balanced, in the purely material sense, by the enormous technical advances that were made in the War and post-War years. If it is true that the average real income was 3 per cent less after the lapse of nearly a generation, there is certainly cause for disquietude, particularly when regard is paid to the advance made by some of the other nations. The official reports of conditions in the United States show that between 1909 and 1921 (five years less than the period taken for this country) the *per capita* income, stated in terms of the 1913 price level, rose from 312 to 334, i.e. by 7 per cent. Had the period been the full seventeen years, so as to include the three prosperous years following 1921, there can be no doubt that the percentage of increase would have been even greater. The slump at the end of the third decade materially checked the rate of American progress, but as the depression was world-wide, and notably affected Great Britain, the relative position of the United States was, on the whole, apparently maintained.

THE LIMITATIONS OF INDEX NUMBERS

In comparing the conditions of different years between which an appreciable change has taken place in the level of prices, it is desirable that the index number recording this change should be scientifically constructed, for otherwise very misleading conclusions would be drawn. If the index number of the later year overstated the rise in prices, to set it against the increase in money income would give a result that understated what real advance had been made, and might, in fact, indicate a net loss. If, on the other hand, the index number understated the rise in prices, an overstatement of real income in the later year would result.

Some of those who criticize the findings of the Board of Trade statistician on the alleged decline in *per capita* income question the soundness of the index number employed. The three best known figures are those of the Board of Trade itself, *The Economist* and *The Statist.* (The cost of living index number of the Ministry of Labour, which is based on retail prices, comes in a different category.) The Board of Trade and *The Economist* methods of calculation fixed the increase in prices between 1907 and 1924 to be about 87½ per cent, while *The Statist* put it at 74 per cent. Because the third estimate differed so much from the others, the official statistician decided to ignore it and proceeded to calculate on a basis of 87½ per cent price increase. It was reckoned that the national income in 1924 represented £2,100 millions in terms of 1907 prices, this sum being 7 per cent greater than the estimated income for that year. But, since the population had grown by about 10 per cent during the seventeen years, the average individual income in 1924 worked out at 3 per cent less than that in 1907.

Now, if there is any valid ground for believing that 87½ per cent was an overstatement of the price increase for 1924, it would mean that the *per capita* real income had not declined to the extent indicated, and might, in fact, have gone up. Suppose, for example, that *The Statist* estimate of 74 per cent increase were approximately true. Calculation on the same lines would show that the average real income, instead of diminishing, actually increased by 4½ per cent.

It is not suggested, of course, that the lower estimate of the price increase was correct, or even that it was nearer the mark than was the higher estimate. It is unfortunate, however, that we have not as yet a scientific method of calculating price changes that commands general acceptance among economists and statisticians. The critics of the official estimates submit that certain articles whose prices enter into the calculation are given "weights" that exceed their relative importance, and that, as the prices of these articles had risen since 1907 by more than the average, the general increase in prices was over-stated, with a consequent exaggeration of the decline in the *per capita* real income.

There is, further, the difficulty of bringing into the estimate such changes as have taken place both in the quality and in the character of goods consumed. It is obviously insufficient to take note of, say, the change in the price of butter, without paying some regard to possible changes in quality. The respective "weights" attached to butter and margarine in 1924 should not be the same as those that were appropriate to 1907. Also, between the two dates new forms of wealth came into general use, while others became relatively less important, if they did not actually go out of existence. Motor travel, the cinema, artificial silk, and a host of other things came to be common items in household budgets in 1924. An index number calculated for that year, but based on commodities that were in use nearly two decades before, could not possibly give a correct index of changes in the general standard.

Uncounted Items of National Income

If it is so difficult to obtain a satisfactory estimate of changes in the average real incomes, the calculation of the shares going to the several personal groups at different times is even more problematical. In the first place, measurements of income as ordinarily understood take into account only those things that actually enter into exchange, or, failing this, are attributed with a definite, if arbitrary, money valuation. In reality, however, there are many forms of income that have no place in the ordinary estimates, causing the aggregate social income to be appreciably greater than commonly understood. The best known and probably the most important item of this type is represented by the services of the millions of housewives, which, being "freely" given, are not usually included in the calculation. The services of housekeepers, however, who are remunerated on a measurable basis, are taken into account in computing the total. Hence, as has often been remarked, if it were the custom for husbands to pay their wives a specific sum per week or month for the work they do in running the household, the estimate of the national income would thereby be considerably increased, though the real income of the community would actually be no greater than before.

We noted in the previous section that, although the wages of a chauffeur were paid from the net income of his employer, it was permissible to add the two incomes together in computing the net total, for the recipients individually rendered services that were measured by their separate incomes. But if the employer now decided to drive his own car, the chauffeur would be deprived of an income, and the joint money revenue of the two men would be less than before. It is reasonable to contend that the services of the employer in driving his car come within the same category as the unpaid services of the housewife; that the real income is greater than the money revenue would indicate. Assuming that the employer's money income remains the same as before (although it is possible, of course, that devoting time to the car causes a certain loss in earnings), we may next imagine him spending the money that he used to pay to his chauffeur on commodities that he could not previously afford. Suppose, for the sake of argument, that the discharged chauffeur (or, for that matter, anybody else who was out of work) now found employment in making these newly-required goods, and received his old rate of wages. A superficial calculation might suggest that, with his income now restored to its original level, and with his former employer's revenue apparently unchanged, the aggregate income was now the same as before. But in reality the total income would be greater by the amount of the new commodities produced in response to the released demand.

These considerations emphasize the point, to which we have already referred, that what really counts is not the money valuation but the actual goods and services produced. Unless this is borne in mind, comparisons of the incomes of different nations or classes are liable to yield false conclusions. For example, a country whose inhabitants are largely engaged in agriculture may, according to the returns, be reckoned to have a lower individual income than another country in which the people are engaged to a larger extent in manufacture and trade. But, as is well known, the agriculturist can directly consume a greater proportion of his own products than can the average industrialist. The share which he consumes does not readily furnish data for the computation of total income.

Even if account were taken of it, the value would more likely approximate to bare production cost than to retail price, thus giving an understatement of his total income. A small community of self-dependent producers, with comparatively little exchange going on among them, might have, according to the customary method of calculation, a low aggregate income, yet enjoy a higher standard of living than is found in more populous and industrialized areas—not to mention the possibility of a greater happiness and contentment which defy expression in economic formulae.

SECTION 28

THE THEORY OF WAGES

THE problem of wages is very wide and complex, involving non-economic as well as economic considerations. The ordinary principles of price-fixing can therefore be only roughly applied. The earlier theories of wages can be usefully studied, for realization of their defects helps in the understanding of recent attempts at explanation. The subsistence theory, though long since discarded, is by no means devoid of significance. The wages fund theory, though also rejected, led indirectly to the recognition of productivity as a chief determining factor. Subsequently it was attempted to show that wages tend to approximate to the productivity of the marginal worker. Though the marginal theory of wages is far from complete, it throws a clear light on important aspects of the problem.

THE COMPLEXITY OF THE PROBLEM

THE scientific study of wages is beset with many difficulties, and it may be admitted at the outset that the theorizing on this subject is by no means complete or, in its present state, altogether satisfactory. The problem is bound to be complex since the "human factor" plays a part of such prominence. Theoretically, the determination of wages might be regarded as a special application of the principles of valuation, but in practice there are several qualifying conditions that cannot be ignored. Up to a point, the conditions of demand and supply in relation to labour fix the value in just the same way as do the market conditions of material commodities. Beyond that point, however, the parallelism is defective because of the presence of certain non-economic considerations.

Critics occasionally wonder why economic writings commonly contain accounts of century-old wages theories, though they refer less frequently to discarded doctrines in other branches of the science. The reason, in the first place, is that we have not yet reached the stage in the analysis of wages principles where we can altogether reject the former attempts at explanation, for they may contain some elements of truth that no final theory can ignore. Secondly, it is helpful to the student to be conversant with the views of the early economists, because that knowledge may prevent many pitfalls, and enable him to appreciate the difficulties of the problem and to exercise a clearer judgment on the theory in its present stage of development.

One of the first things the student who pursues this method will learn is that modern economists, as opposed to their predecessors, recognize the futility of attempting to reduce the theory to a rigid formula. Writers in the past endeavoured to find a "law" of wages, which could be expressed almost with mathematical exactitude. Most present-day economists, while admitting their debt to the early exponents, renounce the idea of a single all-complete statement of wage-determining factors. And those who do attempt to formulate an equation hedge it round with so many provisos and qualifications that it becomes nothing more than a rough expression of tendency, much removed from a definite statement of governing conditions. Even where the numerous influences can be assembled into a single statement, it is impossible to relate them to each other except in the most general terms.

Thus, the object of stating the theories of bygone economists is not to provide a butt for destructive criticism. It is an easy matter to find fault with their views, but we should accomplish little if we did no more than that. The "relativity" of economic theory must be borne in mind. The ideas of Smith, Ricardo, Mill, and Marx may not seem true now, but perhaps they had more relevance when they were first given expression. The theory that finds most acceptance at the present time may, in view of a changed economic environment, be considered to be obsolete a generation or so hence. Current theories are naturally based, to a greater or less degree, on the assumption of competition and private initiative and enterprise. Should the character of the economic system undergo any radical change, as is by no means impossible, the assumptions on which the existing theories are based would no longer be justified, and a new explanation would have to be forthcoming. The very nature of wages, as we understand them, might be altered, while profits, interest and rent, where they continued at all, would have a very different significance. Whether such a transformation is desirable or practicable is, from our point of view, beside the point. We are merely drawing attention to the fact that changes in the system of distribution have already taken place and are liable to occur again as time goes on, and that therefore it is futile to hope for a rigid theory that can apply under all conditions and at all times.

THE SUBSISTENCE THEORY

We showed at an earlier stage that the classical econommists endeavoured to explain values in terms of cost of production. The reward of labour being regarded as a particular kind of value, an attempt was made to account for its determination in accordance with the general theory. The cost of producing labour was held to be the quantity of food, clothing and shelter necessary to maintain a worker and his family, and the idea arose therefore that wages were determined simply by the cost of subsistence.

To understand why this crude theory received a wide acceptance for a time, it is necessary to bear in mind the prevailing views of labour supply, as well as the economic conditions that then existed. The Malthusian theory of population was widely held. Economists and politicians asserted that wages could not for any lengthy period exceed the cost of bare subsistence, for, if by any chance the workers' income exceeded this amount, they would bring more children into the world, and thus eventually increase the supply of labour, with the result that competition for employment would be intensified and wages would come down. If, on the contrary, wages fell below subsistence, the death rate would increase, fewer children would be born and reared, and the consequent shortage of labour would cause wages to rise. Such was the "iron law" of early thinkers, who earned for economics the name of the "dismal science."

It must be admitted that the conditions of the time appeared to bear out the conclusions of the economists, for the average standard of living in the early years of the nineteenth century was very low, and the birth rate certainly responded, as a rule, to temporary improvements in incomes. Even at the present time it is not difficult to find large bodies of people whose circumstances appear in accordance with the subsistence theory. But it is one thing to point to the existing low level of wages, and quite another to say that there is a scientific law in operation which must inexorably bring about that result. The poverty that existed a century ago and that which still exists can be explained by other forces. The break-up of the old system of production, the introduction of labour-saving machinery unaccompanied by any public regulatory policy, the greater bargaining power of the employing classes—these and many other factors contributed to a low standard of living for the mass of the people, independently of the existence of a supposed natural law.

Such force as the theory appeared to possess gradually dwindled as economic conditions improved. The Malthusian basis of the argument slowly crumbled, for it became evident in the course of time that the birth rate did not rise and fall with the wage-earners' income as the early writers maintained. Indeed it is now common knowledge that the birth rate varies as a rule in inverse ratio with one's income. Though it is still unfortunately true that people with the smallest incomes are often the most improvident, and raise families beyond their ability to maintain them, the reason is to be sought in ignorance or some personal defect rather than in the fulfilment of a supposed rule of nature. The most that can be said is that, given certain conditions, the subsistence theory affords a partial if not complete explanation of the determination of wages. But, as social progress makes these conditions increasingly rare, the old "iron law" becomes less and less operative.

SUBSISTENCE AND THE STANDARD OF LIFE

In fairness, however, to Ricardo and the other early exponents of this theory, it should be realized that "subsistence" was not intended by them to mean the absolute minimum of necessaries to keep body and soul together. Such a belief would command little support even in the early nineteenth century, for, low as were the worker's wages, they rarely reached the bedrock minimum physically necessary for existence. The economists of the time had to admit that "subsistence" must be interpreted rather more generously so as to include a certain quantity of the minor comforts of life. A person might come to consider his pipe or glass of beer to be so essential that he would prefer to cut down his other, and perhaps more important, expenditure, should his income suffer a reduction. These commodities may not be entirely necessary for life, but habit and custom give them a firm place in the worker's standard of living. In his negotiations with the employer, or in his domestic calculations, he is certain to take them into account. Although, as we show later, the ultimate governing factor tends to be the worker's product rather than his needs, it cannot be denied that the standards to which he is accustomed exercise a considerable effect on his will and ability to produce, and on the estimate that he places on his services.

The early economists recognized the force of habit and custom, but in so doing they virtually confessed to a vital defect in their theory; for, if the actual wage need not coincide with the physical minimum of subsistence, there was no longer any absolute governing condition. A rise in wages due to fortuitous circumstances might give rise to new habits. And these, if they became deeply ingrained, might stiffen the resistance of the workers to any subsequent downward movement in their pay. A theory that permitted such adjustments would cease, therefore, to have the quality of iron that was commonly attributed to it, and it would also cease to provide a scientific explanation at all. To say that wages are determined by subsistence, but that the conception of subsistence is liable to alter with movements in the wage itself, is but to argue in a circle.

An attempt was made to meet this difficulty without abandoning the principal contention. Ricardo went on to submit that, when the nation was making progress, and new desires were ever seeking satisfaction, the demand for labour would go ahead of the supply, and wages would rise in consequence. This would occasion new habits on the part of the workers, with a corresponding advance in their ideas of the minimum standard. When a boom in trade gave place to a depression, the employers would try to bring down wages. Sometimes they would succeed, but at other times they might find the resistance of the workers too strong. If slump and boom regularly alternated, and with corresponding intensity, the workers might find their general position little altered, but if on balance the country made progress, the workers might enjoy steady advances in their real wages. That, indeed, was held to be the only way in which the working classes could improve their position.

Such reasoning, it will have been noted, departs from the rigid statements that were first put forward. The conclusions are not so pessimistic, but the theory is halting and incomplete. It attempts to explain the wages that are paid at any particular time, but it fails to explain the change from one time to another. As a "static" theory it is not entirely devoid of truth, but as an explanation of tendencies under changing conditions it is defective.

It will have been observed, too, that the reliance upon Malthus's doctrine of population becomes less pronounced. In its crudest form the subsistence theory assumes an automatic reaction of the birth rate to changes in wages. As subsequently enunciated, it permits of a certain improvement in the real standard without the increase in the size of the family that was formerly considered inevitable. Acceptance of the fact that a working man would gradually broaden his estimate of the minimum standard was a virtual repudiation of the former idea that any surplus over bare physical needs must inevitably result in a larger family. We know now that this idea is far from the truth, but realization was dawning even among those who were attempting to bolster up the decaying theory.

THE NOTION OF A WAGES FUND

The subsistence theory was revived at a later date by socialist writers, who put it forward, in a modified form, as a statement of inevitable wages conditions in a capitalist society. But in the meantime it was blended with, and gradually gave first place to, the "wages fund" theory which for some decades dominated orthodox economic thought on this question. The new doctrine was stated to be but an application of the general laws of supply and demand. The supply was said to consist of the number of workers of all kinds. The demand was stated to be the volume of capital that had been accumulated to provide their remuneration in advance of the sale of the product. This fund was supposed to be fairly inelastic in amount, capable of increase only with a general advance in the income of the entire nation.

The lingering influence of the older economic teaching is observed in the working out of the wages fund doctrine. If a group of workers contrived to increase their wages, the improvement, so ran the argument, would be at the expense of all other workers, who would now have to be content with a diminished portion of the aggregate fund. The advance in the real standard, however, even of a few, would be but short-lived, for it was commonly assumed that an addition to income would result in larger families, leading to an increase in the demand for employment and a consequent fall in wages. There would now be more mouths to feed, taking the working classes as a whole, and a drop in the average rate of wages would be bound to ensue. If it fell below subsistence the mortality rate would rise, and eventually, with the diminished supply of labour, wages would rise again.

Suppose, however, that the workers secured an increase in such a way that it came, not from the incomes of their fellows, but from the shares of the employing and capitalist classes. The conclusions of the theorists would be no less gloomy. First, there would be the increase in the birth rate, as predicted by the Malthusians, culminating in an increased demand for employment and a fall in wages. Secondly, the encroachment on the reward of capital would restrict the supply of that necessary factor of production; and with its contraction the capacity to employ would be diminished, thus accentuating the tendency for wages to fall.

The wages fund theory exercised great influence on labour policy in the mid-nineteenth century. Politicians who sought for an excuse for non-intervention by the State in wages disputes interpreted the current doctrine to suit their own purposes. It was futile, they argued, to legislate for a minimum wage since the benefit given to one section of the workers would only be at the expense of the remainder. The attitude to trade unionism was strongly biased by the prevailing notion. A powerful trade union might secure a higher wage for its members, but since, according to the theory, the advance would be paid for, not by the employers, but by the workers as a whole, there was little justification, on general social grounds, for this type of organization and activity. Many of the trade union members themselves were imbued with the same notion, and pursued a cautious policy in consequence. The absence of aggressiveness in the labour movement in the 'fifties and 'sixties can be attributed in some measure to the wide acceptance of the contemporary economic teaching.

Defects of the Fund Theory

It is not a difficult matter to discover the deficiencies of this attempted explanation of wages. In the first place, the Malthusian basis of the theory, as we have already observed, was recognized to be unsatisfactory. Secondly, in regard to the demand for labour, the doctrine failed no less to satisfy the critics. What exactly is the nature of the supposed capital fund? How is it predetermined? What is its proportion to the total capital? Is it so mobile and sensitive as the theory suggests? These and many other questions arose, but remained for the most part unanswered. The more one attempted to discover and measure the alleged fixed fund, the more illusive and indeterminate it proved to be.

But the outstanding defect of the theory was its failure to distinguish between the nominal and the real cost of labour. It is commonly understood nowadays that an increase in wages may, under certain conditions, be made possible, not by diminishing profits or other peoples' wages, but by an improvement in efficiency. If the worker previously received insufficient to maintain himself in a sound physical state, his output, both in quantity and in quality, was almost bound to suffer. An addition to his wages would come, up to a point, from his greater productiveness. The wages in the past might have been so low that the employer did not take great pains to raise the output per worker to the maximum. The organization in the factory might have been weak; the machinery and tools not so efficient as possible. An increase in wage rates, whether it came from trade union or government action, might act as a stimulus to the employer to reorganize his concern and to introduce the most up-to-date implements. In other words, "the economy of high wages," by which it was understood that high wages might, in the circumstances mentioned, be more advantageous to the employer than low wages, became recognized, and thus another blow was struck at the cheerless doctrine of a fixed fund.

Further, an increase in wages and in productivity would naturally swell the aggregate demand for, and the supply of, goods, and there would in consequence be a greater need of capital, both for wages payment and for the necessary plant and equipment. The exponents of the fund theory in its original and crudest form would have maintained that the supply of capital, being strictly limited, would be inadequate to meet the need. But such reasoning would carry little weight at the present time, for the amount of income set aside as capital is known to be far from fixed or predetermined, but capable of considerable elasticity. A general increase in the wealth-producing powers of a nation is conducive to a greater amount of saving, especially if coupled with a more tempting rate of interest.

It may happen that the addition to wages turns out to be more apparent than real if the increase is reflected in higher prices, and therefore in a reduced purchasing power of the workers' money income. It cannot be lightly assumed that all wage advances will come out of greater productivity, and, where they definitely entail an addition to the employer's costs, the price to the consumer may go up in consequence. There is no certainty that prices will go up, for it is possible that some of the producing firms, either because of superior efficiency, or because of the desire to extend their market, will decide to keep to the original prices. But, even if all the firms put up their charges, that would not necessarily prove that the increase in wages was at the expense of the workers as a whole, unless the goods were exclusively those used by the working classes, or utilized by manufacturers in the production of such goods. As a large proportion of the country's products is bought by the non-wage-earning classes, a substantial part of the increased wages cost may be transmitted to them, leaving the workers with a net increase in their real income.

RELATIVE PRODUCTIVITY

If the old wages fund doctrine were applied to conditions in different parts of the world, we might expect to find that, in those countries in which capital was relatively plentiful, wages would be high, while in other countries wages would be low. But there are many "old" countries in which capital supplies are plentiful, yet the workers are not on the whole well paid. On the other hand, the average wage in several "new" countries, that are really short of capital tends to be high. There are certain countries, it is true, the conditions in which appear to bear out the notion of a fund, but the fact that wages elsewhere move in opposite directions demonstrates the limitations of the doctrine. In some of the colonies, for instance, labour is comparatively scarce, and on that account alone it might be highly paid. But, on account of this scarcity, employers are encouraged to introduce as much labour-economizing machinery as possible, so increasing the total amount of the product and the corresponding value per person employed.

Is the wages fund theory, then, completely devoid of significance? As a universal explanation of the reward of labour its deficiencies are evident, but under certain conditions it bears perhaps an element of truth. It is commonly claimed that wages in particular industries are too high in relation to those paid elsewhere. These high wages have to be paid for by high prices, and therefore the demand of the consumers for other goods is reduced, with consequent unemployment or wage-cutting in the trades so affected. Industries that cannot readily pass on the costs—such as those which are subject to acute foreign competition, or which experience a very elastic demand for their products—have often to present to their employees the alternatives of low wages or unemployment. There is in this argument a certain resemblance to the wages fund doctrine in a modified form.

If our survey of the earlier theories of wages has done nothing else, it has brought out the fundamental condition, productivity, in a satisfactory explanation. The subsistence and the wages fund doctrines both failed because they ignored, or under-estimated, the importance of this factor. The first theory attempted to explain wages chiefly from the side of supply, and naturally failed. The second endeavoured to embrace demand as well, but, as we have shown, mere reference to a supposed capital fund as comprising the demand for labour was insufficient. Though the fund might for practical purposes be regarded as fixed at any particular point of time, it was subject to alteration from one period to another. Nor was it even then the chief deciding factor, for figuring more prominently in the eye of the employers than the available volume of capital was the value of the prospective product. If an increase in productivity were likely, the so-called fund of capital would soon adapt itself to the new requirements. The source of wages would become then a "flow" rather than a "fund."

MARGINAL PRODUCTIVITY

To sum up so far, the theory of wages has evolved on lines parallel to the theory of values in general. The early attempts at explaining value placed undue emphasis on the side of supply. Cost of production was supposed to be the principal, if not the only, determinant. Similarly, in the earlier attempts at explaining wages, the subsistence of the labourer, which might be likened to his cost of production, was said to fix the amount of his remuneration. The wages fund doctrine which followed, while not breaking away from the attachment to subsistence as the ultimate deciding factor, left room for the influence on the side of demand, and gradually economists attributed more and more importance to the output of the worker, recognizing the part it played in determining the extent of the demand for his services. In the new theory of value utility assumed a prominent place. Corresponding to utility in the wages theory was productivity. Just as the value of a commodity came to be identified with marginal utility, so the wages of labour were said to be equivalent to marginal productivity.

The importance of the marginal element in the determination of wages is usually illustrated in the following fashion. An employer seeks that combination of labour and capital, and of different types of labour and of capital, that will yield him the maximum net return. It is insufficient, however, to know (even supposing it were definitely ascertainable) how much product he gets from the labour as a whole and from the capital as a whole. He requires to know how much *extra* product he will obtain from taking an *additional* employee or using an *additional* unit of capital. In other words, he goes to the margin to find out the relative productivities of the different factors employed. If he discovers that, with a given outlay, he derives a greater yield from a unit of labour than from a unit of capital, he will, so far as possible, increase his employment of labour relatively to that of capital. Conversely, if he finds a given outlay on capital more remunerative than the same outlay on labour, he will increase the ratio of capital. Under perfect conditions he will adjust and re-adjust the proportions until the marginal productivities of the factors are identical. According to the theory, and assuming frictionless conditions, this convergence must sooner or later be experienced. A superiority in the productivity of one factor over that of another cannot continue indefinitely. The value of one agent diminishes if it becomes relatively plentiful, and increases if it becomes relatively scarce.

The employer will continue to engage labour so long as the value of the product is in excess of, or at least is not below, the wage that is paid. He may, of course, cease to take on further men well before the stage is reached at which the net advantage to him has fallen to *nil.* On the other hand, he may, through faulty judgment, employ workers beyond the most economical stage. Assuming, however, perfect knowledge and mobility, it can readily be demonstrated, on the lines of the general theory of value, that at a certain stage the net additional productivity begins to decline, and that the value of the marginal product becomes equivalent to the wage. The decline can be accounted for in two ways. In the first place, there is liable to be a comparative falling-off in the volume of output once the point of maximum productivity has been passed. Secondly, even if diminishing returns in the purely physical sense are not experienced, the additions to the supply of the goods are likely to react on the price they fetch, and therefore upon the wages that can be paid. What counts is not the actual quantity of the product, but the value that the market conditions place upon it; and physical productivity and the value of the product are liable to vary in inverse proportion.

It follows that the wage, in any given grade, tends to approximate to the value of the product of the marginal worker, or, more strictly, since the employer has to advance the wage and in effect incur a certain interest charge, to the discounted value of the marginal product. Should it be less than that amount, the employer would, under the conditions postulated, engage more men until the equilibrium came about. Should it exceed that amount, the employer would dismiss the surplus workers.

The marginal workers, it need hardly be pointed out, are in no way inferior to the others in the grade. By hypothesis they are all equally efficient and could be interchanged without any alteration in the amount of the product. The inferiority of the marginal employee's product arises simply from the order in which he is employed. If, for instance, A were the 50th man employed, and B the 100th, and the employer found that it just paid to take on the 100th man but no more, B would be the marginal worker with a productivity less than that of A. But it would do equally well to describe B as the 50th employee, and A as the 100th. Having equal productivity capacities, they are paid at the same rate. This reasoning is not in the least incompatible with the payment of varying rates of wages according to individual variations in efficiency. It only relates to the remuneration of workers in a given grade between whom there is nothing to choose.

Limitations of the Marginal Productivity Theory

When the marginal productivity theory was first expounded towards the end of the nineteenth century, many economists hailed it as the solution for which they had long been seeking. Some went so far as to describe it as a "natural law," and were as enthusiastic over the new doctrine as their predecessors had been over their own. But the usual reaction set in. While the marginal theory is on the whole recognized to contain a greater degree of truth than the preceding doctrines, economists of the present day are far from accepting it as a complete statement of all the forces determining wages.

Criticism is directed, for example, against the notion that the product can be divided into minute portions according to the contributions of the respective marginal units, especially in large-scale undertakings. In a concern that has extensive land and buildings, employs numerous people of all grades and abilities, acts in association with several other firms in both a lateral and vertical direction, and produces a wide variety of commodities, a calculation of the exact share of the total product that is attributable to each group, and to gradings within the group, is next to impossible.

It should be borne in mind that the marginal product itself is a variable quantity, depending on a number of conditions that find no place in the crude statement of the doctrine. For instance, marginal productivity will vary according to the supply of available labour relative to the demand and to the other agents of production. Where labour is comparatively plentiful, the productivity of the marginal worker will be less than where labour is comparatively scarce. In an "old" and thickly populated country, workers are obtained more easily than in a newly opened country, with the result that the marginal productivity and therefore the wage is apt to be lower.

The "intensity" of the supply, too, will greatly affect the marginal productivity. Account has to be taken, not only of the number of workers available, but also of the length of the working day and of the assiduity with which the employees perform their duties. Marginal productivity obviously depends on all these factors, but they in turn are to a great extent determined by the wage that is paid. It is a matter of common experience that the efficiency of a worker is largely governed by the remuneration that he receives, either because of the simple inducement to work harder if a greater reward is forthcoming, or because the improved stamina and mentality, that may follow an advance in wages, react beneficially upon the quantity and quality of the output. Thus we have the circular statement that wages depend on marginal productivity, but that marginal productivity itself is partly determined by wages. It is preferable, therefore, not to express the equivalence between wages and marginal productivity in a rigid formula, making one condition depend entirely upon another, but rather to indicate in general terms a mutual relationship between them.

Wages are subject to several other special conditions. Labour-power, being inseparable from the person himself, has to be bought and sold under conditions different from those pertaining to ordinary commodities. The money wage may not be the only deciding factor, for in the aggregate reward are sometimes included various amenities and facilities that considerably affect the willingness of the labourer to offer his services. There is also the comparative immobility of labour, which has an important bearing on wages. Coupled with this is the sluggishness in the growth of new supplies, or in the adaptation to changed requirements, which prevents the facile adjustment of supply to demand that might be expected from a simple and unqualified statement of the general theory.

Of special significance in modern times in the determination of wages is the relative bargaining strength of the respective parties. Left to himself, the worker is at a grave disadvantage in negotiating with the employer, who usually has greater powers of resistance and is not under the same dire necessity to buy individual labour-power as the worker is to sell it. The respective bargaining strengths of employers and employed must have some place in any theory that is to fit in with actual conditions. It has been shown that wages tend to equal the value of the marginal product. More than this the employer cannot pay, though he may, in fact, pay considerably less. The greater is his bargaining strength compared with that of the workers, the less is the likelihood that he will, in fact, pay at the maximum rate. It is the function of the trade union to increase the negotiating power of the workers in order that the maximum rate, or as near to it as possible, can be obtained. The extent to which the trade unions have been able to influence wages, and the alternative policies between which they have had to choose, will be considered in the following section.

SECTION 29

TRADE UNIONISM, WAGES AND EMPLOYMENT

BARGAINING strength is an important factor in wage-determination, and a theory of wages that ignored it would be very incomplete. In industries in which labour organization is weak, employers may adopt a policy of wage-cutting in times of depression, but, instead of restoring the rates when conditions improve, may prefer to increase the numbers employed, thus tending to bring about a relative over-supply of labour and perhaps "sweated" conditions. Trade unions, though they concentrate on means of obtaining wages advances, cannot ignore the possible reactions of high standard rates on unemployment. Trade union policy has had to be modified in recent years to cope with the growth of industrial combinations and of schemes for rationalization. The bearing of rationalization schemes on the general level of wages turns largely on the effects on employment.

THE IMPORTANCE OF BARGAINING STRENGTH

IN the foregoing discussions on wages reference has been made more than once to the importance of the bargaining strength of the workers and of the employers in the determination of their respective shares. It has been shown that a more or less fixed minimum is decided by the workers' cost of subsistence, and that the maximum they can hope for is measured by the net value of their product. Enlightened employers are not disposed to pay their workers at the lowest level, even if they are strong enough to enforce such a rate, for it is recognized that low wages are not necessarily the most profitable; that it is the real cost and not the nominal expense of labour that is the principal factor. But this does not carry with it the obligation to pay at the highest level, indicated by the value of the product. An employer who pays his workpeople high rates, according to the prevailing standards, does not always pay them the utmost that, under different conditions, he might be induced to pay.

Even where the rates of remuneration are considerably above subsistence, and the employer is wise enough to pay sufficient to ensure maximum efficiency, there may still be an appreciable gap between the actual rates and the highest really possible.

The orthodox theory, as we have explained, submits that the wages tend to be equal to the value of the marginal product, and, under the perfect conditions postulated by the theory, the workers' reward would doubtless be governed in this way. But prevailing circumstances may be such as to prevent this theoretical result from working out. "Economic friction" may be so powerful that the actual remuneration shows a wide divergence from marginal productivity. And, furthermore, it is by no means certain that the "laws" governing wages are so "natural" as some of the theorists maintain. If we could start all over again, there is no convincing reason for believing that wage rates would adjust themselves to the scales now in operation. It would be difficult to justify on scientific grounds the marked differences that exist between the wages of Americans, Britishers, Germans and Indians; of men and women operatives; of skilled and unskilled workers.

There appears, then, to be a certain amount of artificiality in the present wages system. Some of the factors are so important that to describe them merely as "frictional" gives a wrong impression of their real character. The power of trade unions, for instance, is so considerable that merely to regard it as a disturbing influence on the general forces of wage-determination is to misunderstand the real position. In the absence of effective trade unionism, the wages may approximate to subsistence, or at the best to the minimum compatible with efficiency. Where trade unionism is strong, the rates may reach the utmost that the value of the product permits. The divergence may be so great as to make bargaining power a major and not a minor, or incidental, influence in the fixing of wages.

Even now there is a division of opinion over the lasting effects of trade unionism on wages. There can be little question that, for comparatively short periods, the influence of trade unions on the share of the workers is very real. Whether the benefit is permanent is another matter. In so far as there is a "floating" surplus, more than enough to provide an efficiency minimum wage on the one hand and a minimum incentive to employers' enterprise on the other hand, the relative strengths of the contending parties will obviously count for a good deal. An increase in trade union power, however, may set up reactions in the long period that diminish and, perhaps, even neutralize the advantages gained in the short period. It may, in the first place, prompt the employers to improve their own bargaining organization (if for the time being it has fallen behind that of the workers) with a consequent readjustment of the respective shares. Secondly, if the rates are found to be too high for a large proportion of the firms, the workers may be compelled by force of circumstances to accept a reduction, even though a number of the employers, especially the most efficient, could afford to continue the higher scales. Or, further, an advance in the minimum rates may decide the employers to discharge those workers who were formerly at or near the margin, but whom it is now unprofitable to retain.

Trade union leaders have had to choose between a policy of relatively high wages, with the liability to heavy dismissals of marginal workers, and a policy of more moderate scales, with the possibility of greater employment. Rightly or wrongly, they have in the main adopted the former policy. In so far as they have been the means of inducing employers to make the most economical arrangement of their resources, the result has on the whole been beneficial, notwithstanding the impetus to the introduction of labour-saving machinery which, for the time being at any rate, may have swelled unemployment. On the other hand, in so far as they have entailed such an addition to the employers' net costs as to prejudice the success of the undertaking, and to necessitate the dismissal of a large number of workers, the result has not been so beneficial.

Labour Organization and Wages

It is not a mere coincidence that those industries in which wages are lowest are often those in which trade unionism is weakest. The sweated worker is notoriously ill organized, and the employer, in the absence of State intervention, is given a free hand in the matter of wage fixing. On the other hand, wages are often found to be highest in those trades in which the organization of labour is strong. From a casual observation, therefore, it might appear that bargaining strength was the chief determining factor of wages, and that much of the theory with which we have been dealing counts for little when we come up against actual conditions. How does the marginal productivity doctrine square with the comparatively high wages in some industries and the comparatively low wages in others? Relative social importance of the product plays apparently little part, for frequently an industry that is of a secondary or luxury kind pays far better wages than one which provides the prime necessaries of life. Often the actual efforts in these industries are quite disproportionate to the wages that are respectively earned. Can the marginal productivity theory be reconciled with these conditions, or is some modification of the doctrine essential?

Although, as we have previously pointed out, the marginal theory does not pretend to be a complete exposition of all the forces determining the value of labour, or of the other agents of production, it is perfectly consistent with, and can be employed up to a point to explain, the different conditions of remuneration obtaining in different industries. The presence or absence of effective bargaining strength need not be regarded as a separate limiting condition, but should be incorporated as an integral part of the general theory.

Compare the conditions and policies adopted in an organized and in an unorganized industry when, for one reason or another, a depression becomes imminent. In the industry in which the trade union is comparatively powerful, the employers hesitate before attempting a reduction in wage rates, and instead may adopt the course of dismissing a number of their workpeople. In an unorganized industry the employers, as likely as not, will cut the rates of wages, knowing that resistance will probably be weak, and will endeavour to keep up their accustomed scale of output by selling their wares at a reduced price. Up to this point there is little to choose between the two policies, as judged from the workers' point of view. When, however, trade begins to recover, the full significance and consequences of the two policies become more evident. In the organized industries, in which the standard wage rates are, it is assumed, maintained, the displaced workers or some of them are taken on again, and the general position differs little from what it was before. But in the unorganized trades, the policy that is adopted during the period of depression may bring about a permanent change in the situation. When the demand for the product revives, employers have to choose between the course of restoring the wages to the former level (which they can presumably now afford to do, if they wish) and that of taking on more workers at the reduced wages rate. In the absence of any external influence, such as government interference, employers in such trades will generally adopt the latter alternative, or at any rate, even if they concede an advance in wages, will tend to increase the number of their employees at a lower scale of wages than originally prevailed, rather than return to the old rates with the former number of workpeople. Thus, the numbers engaged in unorganized industries tend to swell in times of good trade, but when bad trade comes along the policy of wage contraction is again preferred, where practicable, to one of limitation of numbers. The result is to bring into these industries a larger and larger number of people than can be provided with permanent employment at decent rates.

THE TRADE UNION AND THE TRUST

In recent years the trade union movement has encountered difficulties in several different directions. It has been hardly hit by the trade depression and by the extensive unemployment. Its prestige has suffered by unsuccessful strike action and (though this may be but a swing of the pendulum) by a certain transference of interest from " industrial " to " political " methods. Further, though the effect is not so immediate or obvious, its efficacy must to some extent be modified by the spread of industrial combination and rationalization.

The rise of the combine threatens the supremacy of the trade union by setting a monopoly of labour demand against a monopoly of labour supply. In the early days of trade unionism the common defence was that a single employer was equal in bargaining strength to the whole of his employees put together, and that an association of the latter did no more than restore the balance. In many cases, however, the organization of the workers went ahead of that of the employers, and the ratio of bargaining strength was correspondingly altered. But when employers began on a large scale to associate and integrate with each other, they not only secured the many administrative and technical economies that accompany unified production, but they also became strengthened in their negotiations with the trade unions.

The need for trade union policy, structure, and methods to be adapted to the new conditions has long been discussed in labour circles, and the character of trade unionism has in a small measure been changed as a result. But the deeper implications of the system of production attendant upon combination and rationalization are gradually becoming realized—so much so that trade union thinkers are seriously pondering over the necessity for radical changes in organization and methods if the movement is to remain a real force in industrial relations. Rationalization is speeding up a tendency which has been in operation for generations, but which is now becoming so intensified as to cause alarm to trade unionists of the old school. The trade union for the greater part of the 19th century was confined to the skilled workers of the male sex. Gradually, and not without strife within the movement itself, the doors were opened to semi-skilled and to women workers. It was not altogether altruism and chivalry that inspired the change in policy, for, with the introduction of machinery and specialized methods, the trade union leaders recognized that, unless the non-skilled workers for whom there was a growing demand could be brought within the movement, there would be serious danger of the hard-won standards being undermined. In the "New Unionism" movement of the '80's and '90's, and the "Industrial Unionism" movement of the following decades, a large number of these workers were brought within the trade union ranks. But during the last few years the difficulties of keeping a control over labour supply have proved considerable. In a growing number of industries standardization and mass production have made it less necessary for workers to spend several years in learning a job. Those who have had a specialized training have not the same relative advantage that they used to enjoy, for the employer is not so dependent upon them as he used to be. The skilled operative is increasingly apprehensive, in putting forward a claim for a wages advance, lest the employer may be tempted to introduce semi-automatic machinery to be worked by cheap, quickly-trained labour. The skilled worker in the past owed much of his advantage to the comparative immobility of labour, but, with the minute subdivision and standardization of function, the weakening of the barrier between the skilled and the unskilled, the improved standard of general education, and the cheapening of transport and communication, this immobility is gradually breaking down. Those workers outside the trade unions are in some respects more menacing to the standard rates and conditions than they were before. The employer on his part is not slow to realize his advantage in being able to pick and choose with greater liberty than he formerly enjoyed. It is partly for such reasons, quite apart from the fear of the more direct reactions on employment and wages, that organized labour is not a little suspicious of certain schemes that pass under the guise of rationalization.

Rationalization and Wages

The bearing of rationalization on wages turns largely on the effects on employment, which were examined in Part I of this volume. If, as many advocates maintain, employment is eventually improved, wages are likely to be increased. The supply of labour in relation to the demand will, it is argued, tend to be comparatively short, thus improving the worker's bargaining power. His high productivity under the superior conditions of production will make possible a better wage than he enjoyed under the former conditions. Further, any reduction in prices following the rationalization of industry will increase his real income. If his demand for a particular commodity is inelastic, a reduction in its price will make it possible for him to buy other goods in quantities that he could not previously afford.

But the possible long-run benefits to the workers are liable to be severely discounted by the immediate effects of the reorganization. Wages rates are threatened in two main directions. First, the closing-down of the least efficient establishments and possibly, as we have indicated, the deliberate limitation of output usually involve the dismissal of large numbers of workers. Competition for employment is intensified, and the bargaining strength of the employers is increased. For this reason alone a fall in wages may be experienced. Secondly, the introduction of automatic machinery, which is a common accompaniment of rationalization schemes in manufacture, ordinarily entails a reduction in the demand for the comparatively well-paid skilled workers. Resistance by such workers to cuts in wages may have the effect of inducing the employers to resort still further to labour-saving devices. The competition between semi-skilled and skilled workers for employment may thus be increased, and, while the remuneration of the former may show a certain advance (witness the relative improvement in the last decade or two), it may be more than offset by the decline in the payment of the skilled workers, thus causing the general level of wages to decline.

WORKERS' PURCHASING POWER AND EMPLOYMENT

Low wages mean, of course, a small working-class demand, and many employers have been perturbed by the liability for their markets to shrink at the same time as their producing capacity is increased. In an attempt to solve this dilemma some of them have been converted to the principle of high wages—not merely on the score that a decent remuneration may pay for itself by reason of the high efficiency that it often evokes, but also on the ground that the potential market for the products is increased.

Two assumptions, however, underlie this argument, and both of them require some qualification. In the first place, it is apparently assumed that, if the workers did not receive the extra purchasing power, part of the total demand for goods would be lost. Actually, of course, there would be a transference of spending power from the working classes to the other groups of income receivers. If the increases in wages improve the workers' efficiency and output, the results are all to the good. They are likely to be advantageous, too, if there is less wasteful expenditure on luxuries on the part of the rich, and an increase in the expenditure on necessaries on the part of the poor, provided that the redistribution has no ill-effects on the productive powers of the community as a whole. But, apart from these advantages, there is no clear case that a high wages policy necessarily increases the demand for goods regarded as a whole.

The second assumption is to some extent connected with the first. The argument that an employer who pays high wages enjoys a large market for his goods presupposes that the workers are the consumers of their own products. In our modern, highly specialized society, it need hardly be pointed out, the vast majority of the people are engaged in producing for the needs of other people. One's personal demand for the products that one has directly helped to make is very small in proportion to the total demand. Even where a firm is engaged in turning out goods that are in large demand by its own employees, it would be foolish to expect the directors deliberately to increase the wages in order that more goods should be sold. For the argument to carry any weight it is necessary, not that a few comparatively isolated firms should embark upon the high wages policy, but that it should be adopted throughout the whole of industry. Then the benefits would be reciprocal. But at present the few employers who claim to pay high wages for the purpose of expanding the market must know the limitations of their argument, as judged by ordinary commercial standards. Either the high wages are made possible by high productivity—in which event the question of markets does not specially arise—or the firms are paying more than they actually need. But, since the concerns that engage in this policy are almost invariably directed by shrewd business men, it is difficult to escape the conclusion that there are distinct economic gains that make the apparent philanthropy more than worth while.

SECTION 30

THE STANDARD OF LIVING AND THE MINIMUM WAGE

THE standard of living exerts only an indirect bearing on wages. Varying as it does from grade to grade, and from time to time, it is an unsatisfactory basis for any universal and permanent system of wages. Changes in the cost of living do not necessarily point to changes in the wage-paying capacity of particular industries. Besides exercising an indirect influence on wages the State has intervened directly in several industries in which it has set up Trade Boards and similar machinery.

"COST OF PRODUCTION" OF LABOUR

ALTHOUGH the marginal theory is in many respects superior to the earlier attempts at explanation, and overcomes several objections to which the previous doctrines were liable, it by no means embraces every factor that in some measure or other influences the reward of labour. One criticism that is sometimes brought forward is that the theory, as often expressed, attaches too much importance to the side of demand (i.e. to productivity) and too little to the side of supply. In so far as wages can be treated as a form of price, it would seem desirable that the two sets of forces should receive equal consideration. But, unfortunately for those who would like to present a neatly balanced theory of wages, corresponding to a supply-and-demand theory of value, it is impossible to speak of a cost of producing labour in the same terms as the cost of producing ordinary commodities.

Even if labour's "cost" could be estimated, its relationship to the value of the product would still remain somewhat vague. Only where the wage can be expressed in terms of basic minimum amounts does the notion appear feasible. An occupation that entails considerable muscular effort necessitates a greater consumption of staple foods than an occupation of a lighter kind. A miner, for instance, requires more solid sustenance than a clerical worker. If the wages could be said to depend in any way on the physical needs of the respective workers, there would be some case for adjusting the incomes of miners and clerks accordingly. But in practice, of course, the subsistence factor does not play the chief part, at any rate in modern and advancing societies. The clerk would be the first to deny that his minimum needs can be stated in terms of bare physical subsistence. He would maintain that, in the computation of his minimum wage, some at least of the comforts or "conventional necessaries" should be allowed for.

VARIABILITY OF THE STANDARD OF LIVING

It must be admitted that bare subsistence is a very unsatisfactory basis to select, especially in a progressive community in which the wealth-producing capacity of the people is much more than sufficient to provide for the most urgent wants. A better criterion, it might be thought, would be the standard of living, below which no wages ought to fall. But the standard of living, while admittedly permitting of a more reasonable minimum than actual subsistence, is an extremely vague and variable conception. Whereas subsistence can be roughly defined, the standard of living extends over an enormous range. It varies between the relatively unskilled and skilled classes of labourers. It varies between factory and office workers, and between salaried and professional workers. In such cases we have different standards according to economic groupings within a country. But the differentiation goes much farther. The standard of living varies from one country to another, and, furthermore, from one time to another. The American enjoys a higher standard than the Englishman, who, in turn, enjoys a higher standard than the Italian. The standard of the workers of to-day is unquestionably higher than the standard of a century ago. But it is doubtful whether the differences in the actual needs of different nationalities, or of the people at different periods, are in any way commensurate with the rates of remuneration that actually are, or have been, paid.

The truth is, of course, that the standard of life, as commonly understood, is not so much a predetermining cause of the wage as a result of it. When people's incomes go up, due, let us say, to greater productivity and improved bargaining power, the standard of living usually goes up automatically, and before long the recipients become habituated to the higher level of expenditure. Any subsequent attempt on the part of the employers to reduce the rates of pay is resented by the workers who are reluctant to have their new standard undermined. Yet it may be that a reduction in output (not necessarily due to a falling-off in individual efficiency), or a fall in the profits, renders such a course difficult to avoid. However tenaciously the workers may try to cling on to their hard-won standards, they may by the sheer force of events be compelled to accede to the lower wage demands of the employers. If, on the contrary, the unwillingness of the workers to suffer a reduction in their real income causes them to work harder than they did before, the accepted standards of living may properly be said to have exercised some influence, though indirectly, upon the prevailing levels of wages.

THE COST OF LIVING INDEX NUMBER

Considerations like these point to the impossibility of permanently fixing wages merely by reference to the cost of living, even if such a practice were desirable. Yet, as is well known, the wages of large numbers of workers have since the War years been regulated on this basis. The question naturally arises whether this method has on the whole worked satisfactorily for the parties concerned.

One frequent criticism of the index number basis is that it tends to fix too rigidly the real income of the worker. He is, it is true, safeguarded against a fall in his purchasing power, so long as the method continues in operation, but, on the other hand, he may be deprived of an increase in his standard that circumstances otherwise might make possible. When prices are rapidly rising or falling, the system of adjusting money wages to an index has its advantages. During a war, when it is undesirable to dissipate one's energies on anything but the main task, the usefulness of the method is very obvious. But in ordinary times, and over a lengthy period during which economic forces have readjusted themselves and price movements have slowed down—perhaps become fairly stable—the drawbacks of the index number system become increasingly evident. The wages that at one time may have correctly indicated the respective worths of different classes of labour may, within a few years or even months, be thrown out of adjustment to each other. Continuance of the rates that are no longer a true reflection of the relative values is almost bound to create dissatisfaction somewhere, and may easily result in serious dislocation.

Naturally, when the system was devised, the position in 1914 was selected as the basis. For emergency purposes this year was as good as any other. But the more distant we are from 1914 the more glaring become the deficiencies of this regulatory method. A generation has gone by, and in many ways the economic relationships of different industries and groups have profoundly changed. Certain industries that before the War were in a flourishing condition have lost some of their importance, while others have advanced from comparative obscurity to a position of prominence. The disparity that is liable to arise from these changes needs no comment.

Of course, the basis of these schemes is not absolutely fixed, and it is open to employers or workers to press for an alteration in the scales should the circumstances appear to make such a step desirable. In the railway and other industries readjustments have been agreed upon in order to meet the changed conditions. But, if such modifications become common, the few advantages that the sliding scale method possesses will largely disappear. To accept a reduction on the ground of inability of the industry to pay all the original scales, or to demand an increase on the ground that the ability had increased, may be perfectly justifiable, but it is inconsistent with the cost of living principle of payment.

Bound up with these criticisms is the objection that the index number method of wage-fixing tends to stereotype people's real incomes, and that it appears to sanction indefinitely such differences in wage rates as prevailed when the system was initiated. What temporary advantages might accrue from the practice are liable to be more than balanced by the ill-adjustment and friction that must ensue in the course of time.

DIRECT STATE REGULATION OF WAGES

The fact that hundreds of thousands of workers in the employment of the State and the local authorities have their wages adjusted on a cost of living basis must have had a considerable bearing on the rates of pay in industry and trade in general. Similarly, the comparatively high and stabilized rates in public departments must have had a stiffening effect on the remuneration in comparable occupations. The State has influenced general wages in other ways too. Its provision for a "fair wages clause" in public contracts tends (though not to the extent that many had hoped) to improve the pay of other workers in the industries concerned. Also, the scales of unemployment benefit have unquestionably served to keep up the rates of wages in certain trades.

But such methods are very indirect and fail to satisfy those who wish the State to take more direct action in the fixing and enforcement of minimum rates. When, five years before the War, the Government of this country embarked upon their first experiment in wages regulation, they were pursuing a course that the nineteenth century developments in industry and social relations had made inevitable. The actual form and degree of the wages regulation, however, were not soon settled, for different sections and interests had their own ideas of what should be the proper method of control. Some desired (and still do so) that the State should enforce by law the rates that were reached by voluntary negotiations between employers and employed. Others preferred that the State should make an impartial inquiry into the conditions of the industry affected, and lay down for that industry a minimum rate to which all employers should by law be made to conform. Others, again, wished that the State would establish a national minimum wage, below which it would be illegal for employers in any industry to pay their workpeople.

The first of these proposals has not received wide support, for the principle of voluntary negotiations and bargaining is too firmly established. It is feared that, if employers and employed knew that the rates they might agree upon would acquire legal force, they would be less willing to discuss their problems and to enter upon temporary arrangements than they are now. The rigidity that might arise from such a practice might, according to the critics, prove irksome to employers and to workers alike

The former might hesitate to commit themselves to any definite scales of wages if they were uncertain of their ability to continue to pay them for more than a limited period. The latter might be unwilling to let the agreement receive the force of law, lest it might stand in the way of their getting a further advance in a relatively short time. There would be nothing, of course, to prevent the law from recognizing subsequent changes in wages rates, but the practice would nevertheless be less flexible than that of a voluntary arrangement.

The advocacy of the third principle, i.e. the national minimum, has been no more successful, for there are difficulties in its way that appear insuperable even at the present time. Twenty years ago the chances of success would have been even more remote.

THE TRADE BOARDS ACTS

It was the middle course that was accepted by the State. Following the example of certain colonies and foreign nations, the Government decided to provide minimum wage machinery for individual trades in which wages were very low. By the Act of 1909 the Trade Board system was introduced into this country. The representation of employers and employees on these Boards was to be equal, while in addition there were to be some State nominees, who, however, were to compose less than half of the total number. The Boards were to investigate the conditions and to lay down minimum rates, which would be legally enforced. Immediately following the Act, Trade Boards were established in the chain-making, tailoring, paper-box making, and lace-finishing trades, and in 1913 four more trades were similarly provided for. In 1918 a further Act was passed, permitting Trade Boards to be set up in industries in which the conditions could not be described as abnormally bad, but in which the workers' own organizations were too weak for effective bargaining with the employers. As a result, over forty Boards were in existence within a very short time.

In framing the policy to be adopted the Government had to choose between the principle of laying down a minimum wage, based upon what was believed to be the lowest standard of living that people could be expected to enjoy, and the less ambitious alternative of fixing the minimum by reference to what the particular industry could afford to pay its employees. Determining the wage on the former principle would have meant that, had the minimum been relatively high, a large number of people would have lost their employment, and this course therefore was not pursued. Each Trade Board, instead, made a careful inquiry into the circumstances of the particular industry, and aimed at a minimum wage that would not involve the closing-down of establishments except, possibly, those which could exist only by persistently under-paying the workers.

Subsequent inquiries into the operation of the Trade Boards demonstrated that very little unemployment was, in fact, caused by the working of the Act. The average wage, on the other hand, showed a marked increase, and for this improvement more than one explanation was forthcoming. In the first place, there is little doubt that many employers had been making sufficiently large profits to warrant the addition to the wages bill without involving their businesses in serious difficulty. Secondly, in certain industries in which the workers had been so badly paid that they could not afford the means with which to buy the elementary necessaries of life, the increase in wages made a higher standard of efficiency possible, and thus, in a sense, paid for itself. While it was admitted that the marginal firms in some industries might disappear, entailing a corresponding degree of unemployment, the counter-claim was made that the superior firms who remained would extend their activities so as to make up for any shortage of supply, and would possibly absorb any displaced workers, but at a higher level of wages than that to which they had been accustomed.

The policy of the Trade Boards has been criticized on the ground of timidity, for there are many who frankly hold the view that if an industry cannot afford to pay a proper minimum wage, it is parasitical in character, and its elimination would not be disadvantageous to the community as a whole. The defenders, however, of the principle adopted retort that it is no function of the Trade Boards to bring about a revolutionary change in the system of distribution. In view of the fact that the Act of 1918 specifically aimed at establishing Boards in those industries in which the workers' organizations were relatively weak, the protagonists maintain that the Trade Boards are in effect nothing more than substitutes for the trade unions. It is the business of the union to force the employer to pay as much as the industry can afford, but it cannot do more. Why, then, it is asked, should the Trade Board be condemned, because in settling a minimum wage it pays first attention to the capacity of the industry to pay, and not to any predetermined standard, however desirable that might be under more favourable conditions?

OTHER MINIMUM WAGE MACHINERY

The only other statutory minimum wage provisions now in operation in this country are those relating to agricultural workers. The "productivity" of the average farm labourer may be very high from one point of view, but by the measuring rod of money values it is apt to be lower than that of the worker in manufacture. Also trade unionism in agriculture is very weak, partly because of the scattered nature of the industry and the conditions of employment. If it is considered impracticable to fix a wage for manufacture by reference to a decent minimum standard instead of the productive capacity of the industry in question, a heroic plan for laying down a minimum wage for the farm labourer without consideration of the difficulties and peculiarities of his industry is almost bound, in prevailing circumstances, to fail. Even a general minimum for agriculture alone has been strenuously opposed on grounds of impracticability. Conditions are stated to vary so considerably from one area in the country to another that no minimum would be found possible, it is claimed, unless it coincided with the capacity of the least productive district.

It was thought during the War that at last the wages and status of the agricultural labourer could be permanently advanced. Under the Corn Production Act of 1917 the farmers, as a condition of receiving guaranteed minimum prices for their crops, were required to pay their employees an absolute minimum wage of 25s. a week, together with such additions for particular areas as the Agricultural Wages Board, set up under this Act, might specify. Four years later, however, the Act was repealed, and with it the absolute minimum and the Wages Board disappeared. Wages fell in consequence, though a half-hearted attempt was made to establish Voluntary Conciliation Committees for each area, and to give legal force to their decisions.

In 1924 the Agricultural Wages Act was passed, by which County Agricultural Wages Committees were to be established, and their rates to be enforced by law. Failing action by these Committees, a National Wages Board was empowered to intervene. It is frequently regretted, however, that this central board was not given authority to confirm or reject the rates drawn up by the local boards. On the whole, the wages of the agricultural worker have increased slightly since the passing of this measure, though his average income (even when all perquisites are taken into account) is still appreciably below that received in the towns.

Another form of wages machinery at present operating, in which the State plays a definite part, is to be found in the Railway Wages Boards, established by the Railways Act of 1921. The chief purpose of these Boards, however, is not to fix statutory wage rates, but to settle disputes. Any difference, on which a company and its employees fail to come to a settlement, can be referred to the Central Wages Board, which is composed of sixteen members, equally representative of the companies and the workers. Should a settlement still be impossible, the matter can be referred to the National Wages Board, which is composed of six representatives of the companies, six of the men, four of the users of the railways, and an independent chairman appointed by the Ministry of Labour. Thus, indirectly, the State may influence the minimum wages to be paid, but its powers are not nearly so wide as those provided in the legislation previously described. This arrangement has, for the most part, worked satisfactorily, and has prevented more than one dispute from coming to a head.

SECTION 31

WOMEN'S WORK AND WAGES

THE industrial and commercial changes during the last hundred years have offered great opportunities for the employment of women, and have assisted in their economic emancipation. Women's wages, though still low as compared with men's, are much higher relatively than they used to be. Their low rates are only indirectly attributable to the supposed smaller needs and to the smaller number of dependants. Among the chief reasons are the comparative weakness of bargaining power, less physical strength and endurance, greater expenses of employment, inadequate training, and the liability for women to undervalue their services. The proposal for "equal pay for equal work" is attractive, but it is open to several interpretations.

PROGRESS OF WOMEN'S EMPLOYMENT

WHILE it would be a mistake to assume that it is only since the industrial revolution of the late eighteenth century that women have played an important part in industry and trade, for they have at all times had a prominent place in our economic organization, it is only during the last century or so that they have come to present a special economic problem. The new technical processes and the specialization of labour that characterized the changed order made it increasingly possible for women to be employed in workshops and factories. Under the old domestic system, women had been largely engaged on industrial tasks, but their wages were rarely separated from the collective family earnings and paid to them individually. Giving their full time now to employment in the factory, and receiving a definite wage for their services, they acquired a degree of economic emancipation formerly denied to them. Also, in the rapidly growing distributive trades women found new opportunities without experiencing the same opposition from male workers as they found elsewhere.

Wages in general were low at the beginning of the nineteenth century, but they showed a marked though by no means uninterrupted progress in the hundred years that followed. Women workers shared in this improvement, and in several trades made a greater advance than the men. The Great War gave an impetus to the employment of women, and to their rates of pay. Labour was so scarce that women were admitted into those trades that had previously been closed to them. Many "heavy" industries, which formerly employed men exclusively, were now by force of circumstances compelled to take in women, and, to the surprise of many, did not find them so unsuited to the strenuous tasks as had been anticipated. In the munitions industries, in particular, women were taken on in large numbers, and on the whole proved their worth.

Apprehensive lest the employers should retain the women workers when the War came to an end, the men's unions insisted, so far as they had the power, that, in the first place, the wages given to the women should be no lower than those paid to men, and, in the second place, that the employers should re-instate the male workers on their return from hostilities. It will be noted that the "equal pay for equal work" condition, laid down in this case by the men rather than the women workers, rested upon the assumption that an employer, if he were bound to pay on the same scale, would normally give preference to the male workers. The "equal pay" argument, as we shall observe later, is a double-edged instrument.

As might be expected, a reaction set in during the post-War years, and much of the ground that women had gained during the years of labour scarcity was lost. In a few industries, such as, for example, the boot and shoe industry, the women largely retained their position, but, in view of the wide unemployment, it would have been surprising had the general percentage of women employed not seriously diminished. (Incidentally, it may be observed here that the unemployment figures for the post-War years are apt to give a too pessimistic impression if an uncorrected comparison is made with the pre-War returns, for many of those figuring in the post-War unemployed were those women who before the War either did not seek employment, or, if they did, found it in occupations that were not covered by the unemployment insurance statistics.)

Lower Subsistence and Wages

It is commonly asserted that women are paid less than men because their physical needs are less and their dependants are, on the average, less numerous. That many women wage-earners do consume less than men is not denied, but the reason may lie not in their real needs, but in the fact that their wages are insufficient to provide them with better sustenance. Wages have been so low in the past that women perforce have had to stint themselves of necessaries. The character of expenditure, too, should be taken into account. Even though a woman worker might consume less of bread or meat than a worker of the "stronger" sex, there are other items of expenditure which she would consider almost as necessary and which would soon rectify the balance.

It is true that women, on the average, have fewer dependants than men have. Though many women workers have parents and others to support, the proportion of men with dependants is considerably greater. If it could be held that wages were determined by family needs, there would be a strong case for paying men workers at higher rates. But the reasoning of the foregoing sections has gone to show that the dominant factor in wages determination is not what the worker requires, but what he produces. A single man does not, on account of his smaller needs, get less than a married man working on a similar task. Why, then, should the difference in necessary expenditure be taken to justify the differentiation between men's and women's wages? On the other hand, there is the strong likelihood that, in so far as women do require less than men, or have fewer dependants, their supply price under competitive conditions will be correspondingly lower. If women workers place a low price on their labour, either because their personal needs are less or, as will be considered later, because they underestimate the value of their services, most employers will naturally incline to take advantage of the situation. Those who are willing to pay more are liable to be prevented by the competition of rivals who, with lower labour costs, threaten to capture the market.

Weaker Bargaining Power and Mobility

It is well known that women are difficult to organize in trade unions, and, where a group of unorganized women have to bargain with employers who are equal to a combination in themselves, or have to deal with an organized group of men workers, jealous of their position and privileges, there can be little question of the result. Finding the doors of certain trades closed to them, women compete with intensified force for employment wherever they can get it. Often they find work in the newer trades in which there has been too little time for an artificial barrier to be erected. They rush, for example, into general clerical work, but are kept out of those special branches that are still regarded as the strict preserves of male workers. Thus, women invaded the railway and banking offices during the War, but with few exceptions had to give up their positions in the years that followed.

The weaker bargaining strength of women workers is not helped by their comparative immobility. Women are in general less able or willing than men to move to another part of the country, or to train for a new occupation. Parental restraint or attachment, personal ties, reluctance to fend for themselves in a strange place—these and other reasons are responsible for impeding the flow of female labour, and for piling up large supplies in certain regions with prejudicial effects on the rates of pay. In coal-mining regions, for example, there is commonly an abundant supply of female labour, but the rate at which it transfers itself to districts that can make greater use of it is comparatively slow.

The weakness of women's bargaining organization makes it difficult to deal with "pocket-money" workers and others who are subsidized in one form or another. There are many women in employment, not only for the income they derive from it, but also for the liberty that they would not otherwise enjoy. They naturally express a preference for those occupations in which the duties are light and the surroundings not unpleasant. The maximum wage is not their primary object, and, where there are large numbers competing for this kind of work, the remuneration is almost bound to be low. Many of the women in these trades have probably no other means of support, but the presence of a number of candidates for employment, who are not entirely dependent on their earnings, is sufficient to bring down the scale of pay.

In a different, but allied, category are the wives of pensioners and others with small incomes who, through sheer necessity, are driven into the labour market to provide some supplementary revenue for the household. The struggle for employment causes rates to be undercut, though the women individually can hardly be blamed. But the subsidy, small as it is, works out very hardly on those women who have no supplementary revenue of any kind.

Here, again, the absence of effective organization permits of unhealthy rate-cutting.

The difficulty of combining women workers is due, to a large extent, to the attitude that many of them show to their work. The majority do not regard it as a life vocation, but as something which will bring them in some money during the years between leaving school and getting married. As will be shown later, this attitude has an important bearing on the productivity of the woman worker and therefore on the demand for her services. But it also militates against efficient collective bargaining, and tends to bring down the scales of pay quite independently of the specific worth to the employer.

The Factor of Physical Strength

So far in the discussion we have been concerned principally with conditions of supply, but factors of demand are no less responsible for the disparity between men's and women's wages. One obvious determinant, though its importance is liable sometimes to be overstated, is the physical strength of women compared with men. Their weaker physique either debars them from the heavier occupations, or, where they undertake such work, results in a smaller output with consequently lower earnings.

Inferiority of physical strength and the greater liability to absence through illness involve the employer in certain expenditure which does not arise where male workers are employed. The State, too, insists upon certain facilities for women workers which tend to swell the expenses of production. It might be maintained, however, that such expenditure is really of the nature of an investment, that in the long run it reduces the number of hours lost, and that it improves the quality of the output. Whether this outlay constitutes a net burden or not depends largely upon the size and character of the undertaking. Where the work is such that only a few women are employed in proportion to the total number of workers, the expense of providing rest rooms and other special amenities might constitute a serious charge upon the revenue of the business. Under these conditions the unwillingness of employers to take on women workers, except at a substantially lower rate of wages, can be understood. But, where the factory employs a large amount of female labour, the relative outlay on these provisions is not so great, and may be more than balanced by the general improvement in the physique and output of the women employed—a conclusion that is supported by the fact that many employers provide "welfare" services in excess of the statutory minimum requirements.

INADEQUATE TRAINING

Another factor which conspires to reduce the quality of female labour in general is the inadequacy, as a rule, of their industrial training. The fact that most women leave off their ordinary economic employment when they get married, while men, on the contrary, are likely to work with increased vigour when they take on their new responsibilities, has a marked economic significance. Because of the "meantime" character of their employment, comparatively few women are given a lengthy preparation for industry, and their wage-earning powers, therefore, tend to be restricted.

The importance of industrial training in this connection, however, is liable to over-emphasis, for, as is well known, the growing mechanization and standardization of industry are reducing the necessity for a mass of the workers to undergo a lengthy period of learning. If long apprenticeship were as important nowadays as the above argument suggests, we should expect that the workers in the skilled trades, irrespective of sex, would be earning considerably higher wages than those paid to the unskilled or semi-skilled. One of the important changes of the last decade or so has been the narrowing of the gulf between the rates paid to the skilled and unskilled. With modern machinery and methods, many men, who received very little training in their early days, are earning almost as much as, and in some cases more than, their fellows who went through a lengthy term of apprenticeship.

A partial explanation of the inferior wages paid in certain trades is that the women themselves do not expect anything better. More than one reason can be put forward for this lack of appreciation of their own value. First, there is the weakness and perhaps the absence of a trade union which presses for minimum rates, and notifies the members accordingly. Secondly, there is the ignorance on the part of a large number of women of the true economic value of their services, especially in those industries and callings (e.g. retail shops and clerical occupations) in which it is a difficult matter to assess their individual worth. Thirdly, there is the inrush of women who in the past have been unaccustomed to earning their living, who now, for one reason or another, find it necessary to add to their income. They have little knowledge of the labour market, and are too eager to earn a few shillings to pause to ponder over the real value of their work. They seize almost any employment that is given to them, without serious regard to the rates that are paid to others, including men, for similar work. If they happen to be subsidized, either from the collective family revenue or from some other source, the undercutting may bring the wages down to a level far below the economic value of their services.

In consequence of these various factors, there is a tendency for women to concentrate, not only in those industries in which trade union and similar restrictions are absent, but also in those in which the average productivity per head is fairly low. The Census of Production has shown that male workers predominate in those occupations in which the average net output per head is higher, and that female labour is in the majority where productivity per head is low. Thus a vicious circle tends to operate. Women are to a large extent driven into those occupations that have a low productivity per head because they are prevented for the various reasons from securing employment in others. And, being compelled in large numbers to work on tasks that have a low economic value, they tend, because of this concentration and competition, to force the wage rates even lower.

EQUAL PAY FOR EQUAL WORK

A discussion of women's wages would be incomplete without a reference to the thorny problem of "equal pay for equal work." The idea has given rise to wide controversy, particularly in those occupations and professions in which the proportion of women workers is very high. Unfortunately, the phrase is so ambiguous, and gives rise to so many interpretations, that people engaged in discussing the problem often find themselves at cross purposes.

The phrase may, in the first place, be interpreted to mean equal pay for equal effort and sacrifice. This view is not far-reaching, for it is almost impossible to measure effort and sacrifice in any exact terms. The energy consumed by one person in performing a given task may be twice that required by another. Even if it were practicable to express the effort and sacrifice in some common terms, the principle would still be unsound in that it takes no cognizance of the amount and quality of the product. To argue for equal pay for equal work in this particular sense is to favour a one-sided theory of wages for which there can be little support.

The second interpretation is that there should be equal pay for equal product. This view is more satisfying than the first in that it takes the realities into account, recognizing that wages ultimately must be paid out of the wealth that the workers produce. It is true that the theory stresses the demand rather than the supply side, and to that extent might fail to satisfy those who imagine that wages ought to be calculated in part by reference to the workers' needs. But this, it should be noted, is a different argument from that which favours remuneration according to effort and sacrifice. On the whole, the interpretation of the doctrine to mean an equal reward for equal product is more consistent with general principles and with prevailing economic conditions.

In many industries men and women are, in effect, paid at the same rate, i.e. in terms of product, though it may be that the lesser ability to turn out the same number of goods in a given period entails a lower time rate. Thus, if it could be shown that a woman produced only three-quarters as much as a man in the course of a day or week, it might not be incompatible with the principle of equal pay for equal work, as here interpreted, if the actual time rates paid to women were 25 per cent lower than those paid to men.

This interpretation of the formula may be criticized both from the workers' and from the employers' point of view. Some trade unionists would contend that it is liable to strengthen individual at the expense of collective bargaining. As a result, there might be a wider disparity between the earnings of the workers in a particular trade than the advocates of standard minimum rates would approve. Furthermore, even though, to begin with, the actual wages of an individual worker might coincide with the value of his, or her, net product, the possible undermining of the strength of collective bargaining might eventually place the worker at such a disadvantage in the negotiations with the employer that the rate of wages fell below the value of the product. Equal pay for equal product, therefore, would be acceptable only so long as the workers were sufficiently organized to resist the undercutting tendency that might result from an unrestricted application of the rule.

The second version can be criticized from the employers' point of view on the ground that it does not take into account those additional expenses that the employment of women involves. This leads us to a third interpretation, viz., equal pay for equal value to the employer. The additional expenditure is mainly of two kinds. First, there is the outlay, to which we have previously referred, on special facilities that employers are compelled by law to provide for their women employees. Secondly, and in some ways more important, there is the relatively greater cost of capital appliances, factory space, etc., that is incurred when the specific output per hour is less from women than from men. The overhead charges are, of course, little altered whether a machine or workshop is being fully utilized or not. Where a woman, for example, working on a particular machine, turns out only three-quarters as much as a man, the net value of her work to the employer is less than three-quarters the value of the man's production. The employer would be justified in deducting from the three-quarter gross product such an amount as would compensate for the less effective use of the machine. Where the instrument is very costly, and the employer wishes to obtain the maximum use before it becomes obsolete, the preference to employ the most efficient workers is naturally greater. Less productive workers are employed only if the rates are differentiated sufficiently to meet the additional costs on this account.

In view, therefore, of the several interpretations of "equality" in men's and women's pay, and of the different emphasis placed upon them according to the particular point of view, it is not surprising that the proposal still remains a source of controversy.

SECTION 32

PAYMENT ACCORDING TO NEEDS

PROPOSALS are frequently made for an alteration in the wages system so as to effect a closer relationship between wages and needs. Family endowment and similar plans may be classified according to whether they are intended to bring about a lateral or a vertical redistribution, and the particular schemes put forward vary considerably as a result. The reactions of family endowment measures upon population and wages are very problematical.

WAGES AND NEEDS

DURING the last few years the movement has gained ground for a modification of the wages system in such a way as to secure a closer approximation of remuneration to needs. For a long time there has been some dissatisfaction over the disproportionate rates paid to men and women workers, and the original proposals for family endowment or mothers' pensions or similar measures came largely from the protagonists of the feminist cause. But of late the ideas underlying such schemes have made a wider appeal, and now there is a considerable body of opinion which favours a readjustment on these lines of wages in general, and not merely of the rates paid to men and women workers in particular.

The various proposals that have been put forward are not all inspired by the same motive, nor are they intended to achieve the same object. Though they are commonly designated in similar terms, they may range from a very modest and unambitious scheme to one which is distinctly revolutionary in character and aims. Broadly speaking, they may be divided into two main categories. First, there are those schemes which merely intend that the present gross amounts paid in wages shall be more equitably apportioned between married and single workers. There is no intention that the share of the national income that goes to labour as a whole shall be directly increased by these measures. The aim is simply to share out the existing total in such a way that those with large families shall receive rather more than their present incomes, not at the expense of the employers or the taxpayers, but at the expense of other workers who have few or no dependants, and whose needs, therefore, are relatively small.

Secondly, there are those proposals which would make family endowment a means of redistributing the national income in such a way as to secure a larger share for the workers in general. Certain of these schemes are fairly modest in nature, and find adherents in all parties. Other proposals, however, are avowedly socialistic, and, by extracting large amounts from the employers, or through the Exchequer from the taxpayers, or from both, would appreciably increase the proportion of the total product that goes to the working classes. The first type of scheme, which aims simply at a rearrangement of rewards among the workers as a whole, without affecting the amounts going to the other groups, may be described as "lateral," to distinguish it from that type of proposal which, since it would alter the levels of income going to the several classes, is more of a "vertical" character.

Existing and Proposed Schemes

A few schemes are in operation on the Continent, but they are mainly of the "lateral" kind. In France, for example, employers and others in certain industries have devised schemes under which all workers in a given grade receive the same basic rate of wages, in addition to which certain amounts are paid into an "equalization fund." Out of this fund sums are paid to employees in proportion to the number of dependants. Needless to say, this apparently roundabout method of remunerating the workers according to their needs is adopted in preference to direct grants from the employers, in order to avoid the possible hardship that might otherwise be inflicted upon the married workers. It would be highly undesirable if, as a result of a system of direct additions, the employer gave preference to single workers and caused unemployment among those whose family needs were the greatest.

There have, it is true, been attempts at a method of direct grants. In Germany, during the difficult years following the War, several employers experimented with a system of differentiating the wage according to the position of individual workers, and the records did not indicate any undue unemployment among married workers as a result. The explanation is probably to be found in the fact that labour in post-War Germany was comparatively scarce, and that the cash additions paid by the employers were not sufficiently large to warrant a policy of dismissals of those whose remuneration worked out above the average. The circumstances were so exceptional, however, that the experience during that period offers little assistance to those who wish to estimate the probable effects and reactions in other countries under more normal conditions.

The Continental schemes may be criticized on the grounds that they are industrial or occupational, and not national, in their operation. It may be argued that the services of motherhood cannot be expressed in terms of narrow occupational value; that the advantage is national and not industrial. But, apart from this criticism, there is a further difficulty inherent in most schemes of this character that are devised on the industrial basis. Where is the line to be drawn between one industry and another? What of those occupational groupings in which the average family is comparatively large? What, further, if a particular industry, the workers in which have on the whole fairly large families, is in such a position that it can ill afford to pay the high wages that would be required?

There are some who would graft a scheme of family endowment on to the existing system of social insurance. Briefly, they recommend that the employee, the employer and the State should make an appropriate contribution to a fund out of which the endowment payments would be made. For practical reasons they would make a lump sum of the different payments made by the contributor for the various benefits, and likewise amalgamate the several contributions paid respectively by the employer and the State. Such a method has been objected to, however, on the ground that the rearing of a family is an undertaking that cannot be placed in the same category as the contingencies of unemployment and ill-health. Normally, one insures against eventualities which will be avoided so far as is possible, but, as the raising of a family is normally favoured rather than avoided, difficulties are liable to occur when all these contingencies are thrown together into a single scheme with a collective premium.

The insurance proposal has the advantage of making the charge a national rather than an occupational one, and to that extent recognizes the service of motherhood to the community as a whole as well as the responsibility of the State to the individual. It will be observed, too, that the proposal goes beyond the purely "lateral" principle embodied in the "equalization fund" method described above. By obtaining part of the necessary money from the employers and from the taxpayers, the scheme would bring about to some extent a "vertical" redistribution, and would thus add to the share of the national dividend received by the working classes.

EFFECTS ON POPULATION AND WAGES

It is frequently argued against proposals of this kind that the check to the growth of population would be weakened, and that an undue increase in the numbers of the people would probably result. Discussion on this point is rendered more difficult by the fact that in France an avowed object of such schemes has been the desire for an increased birth rate. British advocates of these measures deny that they would have the effect in this country of swelling the population, and point out in fact that the improvement in the standard of living during the last half century or so has been accompanied not by a rise but by a fall in the birth rate. They might point out further that, in so far as the schemes reduced the earnings of single men, the marrying age might be delayed for a year or two, with a corresponding limitation on the increase in numbers.

The general effect on wages would naturally vary with the motive and method of the particular scheme. If the aim is a "lateral" redistribution, then obviously a reduction in the basic rate of wages must be expected, though it is presumed that the additions to the income of the married workers will balance the reductions in the incomes of the single. Some critics of this particular method, however, are apprehensive lest the deductions from the present wages of the single workers should not be fully compensated by the increase in the wages of the others, and see in the proposal an attempt on the part of the employing classes to undermine the workers' standard of living. Certain of the Continental schemes have been attacked on this point, it being maintained that, but for their operation, the average wage would be higher than the existing level. It is pointed out that the initiative for such schemes has come from the side of the employers, who, it is averred, would not sponsor such an arrangement if it did not work out to their advantage.

This conflict need not arise, however, if it could be shown that the net result of family endowment schemes was to increase the general efficiency of the workers. If it could be proved that the additions to the wages came, not from the unmarried workers' wages or from the employers' profits, but from an addition to the total volume of goods and services produced, then a substantial case could be made out for the schemes on strictly economic grounds. Such an effect might be brought about, first, by providing the worker with more and better nourishment and other necessaries. Even though the primary intention of the special payments were the proper upbringing and sustenance of the children, there might, indirectly, be an improvement in the standards of the parents through the liberation of funds to provide necessaries for themselves. In the second place a larger expenditure on the maintenance of the younger generation would almost certainly in the long run add to the productive power of the nation. The improvement in the physique and mentality of the children and adolescents of to-day is due in large measure to the higher average standard of living, and to the expenditure of public departments on the care and upbringing of the young. Many supporters of family endowment schemes maintain, therefore, that even if there is no apparent advantage immediately forthcoming, the benefits in the long run are bound to more than compensate for the present outlay.

But, as usual, there are counter-considerations. A common contention is that subventions from public funds would lessen the incentive of many people to exert themselves to the full. Though the number of such people is liable to exaggeration, the schemes, if they were adopted, would have to be carefully devised so as to prevent or minimize abuse. Further, there is the possible ill-effect, not so much on the workers themselves as on the productive capacity of the nation as a whole. If the particular scheme does not encroach upon profits or the taxpayer's pocket, the consequences fall mostly on the workers directly concerned. But if the scheme is of the "vertical" kind, there is the possibility that the economic system in general will be impaired. If the employer's profits are already at the minimum, and if he is precluded from passing on the charge to his customers, he may find it necessary to cut down expenditure on new ventures and equipment. The taxpayer, on his part, may, for physical and psychological reasons, be prevented or discouraged from maintaining his accustomed level of production. Such possibilities cannot be ignored in estimating the likely results of family endowment and similar projects.

SECTION 33

THE PROFITS OF ENTERPRISE

THOUGH wages and profits overlap to some extent, each has its own definite characteristics. Profits can usually be analysed into the wages of management, the reward of risk, and possibly an element of monopoly revenue and a payment akin to economic rent.

CHARACTERISTICS OF PROFITS

IN the foregoing sections we have been concerned at some length with the nature of the reward that goes to labour as distinct from the shares destined for the other agents of production. This distinction, however, is more apparent than real. In the first place, many of the considerations that arise in the discussion on wages are no less relevant in the treatment of the other incomes. Secondly, the gross amount paid in wages necessarily helps to determine the shares of the other factors. Thirdly, the wages themselves cannot be reduced to a single type, nor do they possess characteristics that are altogether absent in the other forms of income. It is especially difficult to draw a rigid line between wages and profits. To say merely that the former represent the return to labour, and that the latter are the reward of organization or enterprise, is by no means sufficient, and is, in fact, misleading. The peculiar qualities which are possessed by the entrepreneur, and which are usually taken to justify the special treatment of his income, are sometimes possessed and exercised by people whom it is customary to describe as wage-earners. On the other hand, a certain part of the entrepreneur's activities is identifiable with labour in the truest sense, and is rewarded by what has come to be called the wages of management.

Profits, in everyday language, are associated with the earnings of people who carry on a business of their own, and usually, though not necessarily, employ labour to assist them in their work. Such earnings are principally residual in character, as distinct from the advance payment made to labour. Furthermore, they are usually, though not always, bound up with the income from capital. As a general rule, entrepreneurs work either with their own or with borrowed capital. The undertaking of risks, which is their special function, is almost meaningless without reference to capital. Profits may thus embrace more than one kind of income. Though the gross amount may not always be capable of precise division, it is helpful to attempt an analysis, however rough, of the principal components.

WAGES OF MANAGEMENT

In modern economic writings, the element of earnings, or wages of management, has come to play an important part in the analysis of gross profits. There is no question, of course, that much of what passes for profits is genuinely a reward for the efforts of the business man in directing the activities of his undertaking. On the other hand, there is often a large element of true profits in many so-called wages or salaries. For instance, it would be hardly correct to describe the amounts paid to company directors as wages in the proper sense of the term. Part of their duties is inseparable from the functions of the entrepreneur. Though ostensibly they are employed by the company, they are, in reality, performing the same duties as if they were conducting their own business. Moreover, it frequently happens that the salaries appropriated to themselves, by virtue of their directorships, are considerably in excess of the sums that they would draw if they were employed simply as managers by other firms on work that called for business direction and no more.

Again, it is a common feature in remunerating managers (for example, in departmental or multiple stores) to fix a comparatively low minimum reward and to add to it a commission based upon the turnover or gross profits of the department or branch. The manager is thus expected to undertake certain duties that are not ordinarily classified as labour in the narrow sense. He is expected to exercise his foresight, to judge the condition of his particular market, to select workpeople and employ them to the best advantage, thus acting in many ways as if he were conducting his own business. It is not stretching the term to describe part of the remuneration of such managers as profits rather than pure wages.

RISK-TAKING

It is unnecessary to enter again into the importance of risk-taking as a factor of modern production. When dealing at an earlier stage with the agents of production, we pointed out the place of the risk-taker in the economic system. One of the most common types of risk-taking is to be found in anticipating the nature and extent of the demand, which depends frequently on unknown or incalculable factors. There is, further, the problem of fluctuations of prices over which the producer has no direct control. If we lived in a perfectly stable society, and values underwent little or no change over long periods, the function of the risk-taker would be less important. But, in recent times particularly, business men have been called upon to exercise unusual judgment and foresight in dealing with markets in which prices have shown a marked variability.

A characteristic feature of our modern economic organization is the ability to spread risks over a wide area.

While we still have entrepreneurs of the conventional type, who, in the manner of the almost traditional 18th century middleman, act as links between producers and consumers and undertake the risks of the organization as a whole, the growth of the joint-stock company has, apart from swelling the number of investors, given rise to a new form of enterprising function. The undertaking of risks used to be concentrated among a comparative few, whereas in the now prevailing system the liability to loss may be distributed over thousands of shareholders. Where the business is safe and steady, the dividends may be little above those earned on gilt-edged investments, but where the risks are considerable the profits (or losses) may be correspondingly high. Risk-taking thus becomes not necessarily an individual activity, but a function in which a large number of persons can participate. As such it is to be distinguished from that form of organization which is more personally directive in character, and which is rewarded by a wage of management.

One further aspect of the risk element has still to be noted. Risks are to a large and increasing extent becoming measurable, and, within certain limits, even predictable. Though an individual entrepreneur may appear to be at the mercy of chance, it may happen that the aggregate of the risks incurred in his particular line of business is roughly measurable over a period, and that a fairly accurate ratio can be formulated. In the same way as it is possible to work out the premium to cover a person against the risk of fire, or other contingency, so actuaries are becoming more and more interested in the possibility of providing for the risks of business. Thus a part of gross profits tends to become in effect a premium against risk. The principle remains the same, however, whether this payment is formally handed over to an insurance company or whether it remains as part of the income of the entrepreneur who thus virtually provides the service of insurance himself. This function of insurance is particularly noticeable in those industries in which the middleman takes the bulk of the risks upon himself, thus relieving others of the liability to loss, and enabling them to go forward with their own particular work. The cotton broker, for example, incurs the responsibility of finding a market for crops still to be grown. He places definite contracts with the growers, who are thus relieved of the worry of finding a market for their produce. Part of the profits that he makes from his services as a go-between comprises an insurance payment, which would have had to be made as such had the risk been assumed by a company specially providing that kind of service.

COMPETITIVE AND MONOPOLY PROFITS

The analysis of gross profits, however, is as yet far from complete. One consideration that has so far been ignored springs from the conditions, competitive and otherwise, under which the income is made. The more we depart from pure competition, the more important becomes the monopoly element in profits, until, in a business that has full control over the production and sale of a particular commodity, the items for wages of management and returns to risk may comprise but a small proportion of the total. For a proper understanding of the remaining part of gross profits it is necessary to have a knowledge of the other forms of income and of the scheme of distribution as a whole. Wages and profits, it has been observed, overlap to some extent, but each has its distinctive characteristics. We have still to show that profits and interest have a good deal in common. Also, when we come to deal with rent, it will be seen that this form of payment is of wider application in principle than to the payment for land alone, and that the rent doctrine, suitably qualified and expanded, helps to a fuller understanding of incomes in general and, in particular, of gross profits in which a "surplus" element, akin to an economic rent, is often very pronounced.

SECTION 34

THE INTEREST OF CAPITAL

SEVERAL elements go to make up gross interest, net interest being seldom encountered in practice. The views on the nature of interest have altered considerably since the days when it was legally prohibited. The modern theory takes into account the psychological factors on the side of supply as well as the element of productiveness on the side of demand.

GROSS AND NET INTEREST

THE conventional definition of interest as the reward of capital does not tell us very much about the real nature and composition of this form of income. Interest, in its everyday sense, covers much more than the specific return to the capitalist for the factor that he supplies, and it is necessary from the start to distinguish the several items that go to make up the gross income denoted by the term.

In the first place, there may be a considerable proportion of reward for risk-taking, on which we have already had something to say. The fact that one particular investment yields a so-called interest of 5 per cent more than another may, of course, be due entirely to the greater element of speculation, and therefore to the larger premium, as it were, against risk. Secondly, gross interest may include a payment for the actual management of the investment, comparable to the wages of management in the analysis of gross profits. The interest charged, for example, on bank loans represents to a large extent the expenses of the banker in carrying on his business. Thirdly, there may be an element representing a monopoly gain. Such an amount, as will be explained later, bears some resemblance to a rent. When such items have been separated, there remains what may, for our purposes, be called pure or net interest, i.e. the specific payment for the use of capital loaned.

It is admittedly difficult to treat pure interest, as thus defined, as an entirely independent quantity. We have previously pointed out that enterprise or risk-taking as a factor of production can rarely be dissociated from the ownership of capital. Similarly, it is virtually impossible to make a sharp distinction between the reward of enterprise and the return to capital. At the best, one can take the dividend paid on gilt-edged securities and assume for practical purposes that it is more or less equivalent to pure interest.

THE NATURE OF INTEREST

The discussion on interest falls into two parts. First, there is the problem of the nature of interest; secondly, there is the question of the determination of the rate of interest. The two are naturally inter-related, and are studied separately, up to a point, largely for convenience of exposition.

The nature of interest has been discussed from early times. For many centuries the receipt of interest was held to be morally indefensible, and came under the ban of the law. It was not, in fact, until close on the middle of the nineteenth century that the laws of usury in this country were formally repealed. The legislation, however, had been an anachronism for many years, for, had the repressive laws been faithfully observed, the expansion of British industry and trade from Tudor times to the nineteenth century would have been severely hampered. It is easy to understand, however, the early views of interest. The borrowers were frequently of the noble classes and, as often as not, used to spend the loan unproductively, if not wastefully. There were, of course, more humble borrowers, but they, too, commonly regarded a loan as a means of settling immediate financial difficulties rather than as a capital expenditure for productive purposes.

Thus, whether the money was borrowed by rich or poor, there was little to show in terms of wealth as a result of the expenditure. The risks attendant on loans were high, and so also were the rates of interest charged. Since the payment of interest made heavy exactions on current income, and frequently caused distress, there appeared at the time some reason for taking a rigid view of the immorality of interest, and embodying it in prohibitive legislation. When, however, industry and commerce showed signs of expansion, the effects of the usury laws became increasingly irksome. The State gradually adopted a policy of connivance, and ultimately erased the laws from the statute book.

This "exploitation" theory added nothing positive to the theory of interest, but recognition of its defects had at least the result of bringing about a more rational and constructive attitude to the problem. Gradually the theory of the nature of capital developed in two main directions. One school of economists sought for an explanation on the side of supply, giving most of their thought to the influences governing the actions of the lenders. Others endeavoured to find an explanation on the side of demand. Subsequently the two sets of conditions were brought together in an attempt to find a comprehensive explanation.

THE "ABSTINENCE" AND THE "AGIO" THEORIES

It used popularly to be held that interest was simply a reward of abstinence. Stated in this crude fashion, the doctrine was not difficult to criticize. One obvious, but probably exaggerated, defect of such a theory springs from the term itself. "Abstinence" may be taken to convey an element of sacrifice and, while it is true that for most people the act of saving involves a degree of "pain," this cannot be said of those fortunate individuals who enjoy such large incomes that, however extravagantly they may live, they cannot help accumulating further capital. Such automatic saving is hardly consistent with "abstinence" as popularly understood. Marshall and others therefore preferred to employ the term "waiting" in its stead, though the concession in the use of terms did not make much material difference.

A more serious defect of this theory is that it attempts to explain the reward from the side of supply only. As has been pointed out by certain critics, the mere fact of abstinence is of a purely negative character, and as such can hardly yield a return. To obtain a more balanced explanation it is necessary to turn to the side of demand, and to consider, not only what the lender asks for the use of his capital, but also what the borrower is prepared to pay for it. The amount that he is willing to pay depends obviously on the productive use that he can make of the capital. By its use he can increase the volume of production, or lower the cost of producing the existing quantities. For either purpose he is prepared to pay an interest which, so he calculates, will be at least, and probably more than, balanced by the additional output or economies.

In some ways allied to the "abstinence" theory is the "agio" doctrine, which was largely developed by the Austrian school of economists. This theory, stated briefly, rests on the psychological principle that a person naturally prefers to enjoy things in the present rather than in the future. The question of risk, or any similar contingency, does not arise. It is assumed that, if a person is offered the choice of consuming a certain amount of goods now, and of deferring the consumption of the same value of goods in a year's time, he will normally prefer to have the immediate benefit, even though there is absolute certainty that the goods will be there to enjoy in a year's time if he is prepared to wait for them. Even if he is offered, say, three per cent more in a year's time, his impatience to consume in the present may still be too great to be affected by this small payment. But if the percentage offered were to rise to, say, five, then he might consider it worth his while to abstain from present enjoyment. The additional amount payable a year hence is said to represent in effect the compensation for foregoing the benefit of present consumption. There is thus a time preference, and the theory resolves itself into the simple statement that interest is the price of time.

The "agio" theory is incomplete in itself, partly because there are many lenders who, far from discounting the future as heavily as the advocates of the theory imagine, are, in fact, but little influenced by the rate of interest that is offered. The doctrine suffers also from the general criticism directed against the abstinence theory. However true the psychological statement may be, the fact still remains that interest is ultimately paid by the borrower, either because the capital has been used productively or because the money borrowed has in some other way rendered a service. We have observed in other branches of economic valuation that no theory that attempts an explanation exclusively from the side of demand or of supply can be sufficient, and the theory of interest proves to be no exception.

SUPPLY INFLUENCES ON THE RATE OF INTEREST

Before proceeding, however, to examine the factors on the side of demand, which must have their place in any well-balanced theory, we may pay a little closer attention to the conditions of supply. People who lend their capital at a given rate of interest do not all provide this service with the same object in view. Some accumulate a surplus of revenue over expenditure independently of the rate of interest. They may be so concerned with providing a nest-egg for themselves or their dependants that the interest rate has little or no effect on the extent of their savings. Indeed, if their intention is to accumulate at compound interest a certain capital sum (whether directly through ordinary deposit savings, or indirectly through insurance companies), a rise in the rate of interest may induce a falling-off in savings, and *vice versa*. Or they may be so well off that their savings are more or less automatic, in which event the direct influence of the rate of interest is inconsiderable. The importance of such lenders should not be under-estimated in considering the influence of the price of capital on the supply. The natural tendency in applying the general laws of value is to assume that a rise in the price evokes an increase in the supply and a contraction in the demand, but the principles of value, as ordinarily stated, have not an unlimited application to the problems of distribution. While it is broadly true that a rise in the rate of interest discourages the demand, there is no necessary and automatic increase in the supply. Savings depend partly on conditions that have little direct connection with the rate of interest, as is evident from the fact that considerable capital accumulations took place in the days when the payment of interest was frowned upon by those in authority, and was in many countries prohibited by law.

The total supply of capital, however, that comes from those quarters which are uninfluenced by the current rate of interest is normally insufficient to meet the demand of industrialists and others, and at a certain point, therefore, one has to depend on a rise in the price to stimulate an increase in the supply. From this point onwards there is a certain correspondence between the interest and the supply of capital. Increases in the rate have the double effect of inducing people to save who previously were not saving at all, and of inducing those who, for one reason or another, were already saving something to set apart even larger amounts. The reasoning now becomes similar to that of the general theory of value. At whatever point the rate of interest settles, there is a marginal investor who is just persuaded to lend some of his capital, or a marginal investment that one is just induced to make. Thus, without going through all the stages of the argument afresh, it may be generalized that on the side of supply the rate of interest tends to equal the value placed upon the marginal investment. This estimate is influenced by several considerations, varying with the individual and personal characteristics of the lender. Some incur some sacrifice when setting aside part of their income, while others experience no difficulty or irksomeness at all. If the former are marginal, i.e. if the rate of interest is just high enough to counteract the "painfulness" of saving, the latter, who receive, of course, the same rate on their investments, enjoy a form of surplus over and above the reward with which they would be satisfied under different conditions.

DEMAND INFLUENCES ON THE RATE OF INTEREST

To pass to the conditions of demand, there should be borne in mind from the start the different characteristics of the "investment" and "speculative" markets. The interaction of the forces in the demand in the two types of market is perhaps more readily observed at those times when trade is showing a marked improvement or decline. Under conditions of improving trade many people dispose of their gilt-edged stocks in order to acquire more remunerative industrial shares, with corresponding effects on the market prices of the respective securities. Conversely, when trade is declining, there is a tendency to get rid of the comparatively risky shares, and to concentrate investment in safe government and trustee stocks, causing a fall of the market price of the one and a rise in the price of the other. In so far as there was merely a redistribution of the amounts already invested in one way or another, there would be little bearing on the supply of and demand for capital as a whole. But if a boom in trade caused a real shortage of capital and a general increase in the rate of interest, lenders might be persuaded to spend less and save more, and to the extent that they personally were benefiting from the boom in trade they would have increased quantities of capital available for investment. A slump in trade on the other hand might cause the rate of interest to fall very low, not so much because supplies of capital were over-plentiful as because the demand proved very limited.

Taking all the forces on the side of demand into account, we may apply to them the marginal principles that have previously been examined at some length. In a similar fashion to ordinary consumers, borrowers tend to obtain a diminishing utility from successive units of loaned capital. When the rate is low, it is worth while to borrow capital for a variety of purposes, including the less as well as the more important. When the rate is high, the capital is borrowed for the more essential uses only. As with commodities in general, a fall in the rate encourages existing borrowers to consume more, and to encourage new borrowers to enter the field. A rise in the rate has the opposite effects. People tend therefore to borrow capital up to that point at which the service derived from the marginal unit, as measured in money, is equivalent to the rate of interest. If they stop borrowing before this point is reached, they are not taking full advantage of the position. If they go beyond it, they are making a loss. Thus, to summarize the whole of the foregoing argument, the rate of interest tends on the side of supply to be equivalent to the reward for the marginal investment, and on the side of demand to be equivalent to the marginal use made of the capital.

SECTION 35

THE RENT OF LAND

Pure economic rent represents the payment for the natural agent of production, as distinct from the payments for the factors supplied and controlled by man. It arises from, and is measured by, the differential advantage of superior over marginal land. Rent is said to be not price-determining but price-determined.

ANALYSIS OF GROSS RENTAL

LAND, in economic terminology, represents the "natural" agent of production, and the reward for its use should so far as possible be distinguished from the payments for the man-made factors. Actually much land, in its everyday sense, consists of more than "the original and indestructible powers of the soil," but contains, now inseparable from itself, additions of capital and labour, which cause its productivity, and therefore the reward, to be higher than that for the natural qualities alone. It is this inseparability, however, that makes it so difficult to study and estimate the pure rent alone, and that renders some of the reasoning and conclusions of certain of the older economists somewhat unreal.

The gross rental of a piece of improved land is commonly analysed into the return to the capital invested, the reward to such labour and enterprise as have been applied to it, and the remainder which is considered to be the net economic rent. The first two types of income constitute the payment for man's specific services, either directly by his labour or indirectly by the provision of capital. The third type, i.e. the rent, represents the value of the produce so far as this is in excess of the cost of the labour and capital put into the land. Though this theoretical distinction is valid up to a point, it is not always possible, especially after a lapse of time, to differentiate between the respective rewards. The improvements made as a result of the labour and capital become inalienable from the land itself, and for practical purposes there is nothing to be gained by attempting to deal separately with the component parts.

The term "economic rent" is apt to be used in more than one sense, and the economic interpretation does not always coincide with the everyday usage of the term. For example, when houses were very scarce, and the Government had to control rentals in the interests of working-class tenants, prospective builders were reluctant to erect new dwellings for letting on the ground that they found difficulty in getting an "economic rent." The rent to them meant, of course, a reward for their capital and enterprise. As the cost of the land itself bore, as a rule, but a small proportion to the total expenditure incurred, the description of the gross return in such terms was liable to give a false impression.

The nature of economic rent depends on certain qualities which land possesses to a larger, or at any rate a more evident, extent than the other agents of production. Formerly these qualities were regarded as being exclusive to land alone, and therefore rent was considered to be a unique payment received for no other factor. But latterly it has become recognized that the qualities that evoke the payment of rent are not peculiar to land only, and that a reward akin to rent is to be found in the other kinds of income. The extent to which land and its reward are in a special position, and to which they are fundamentally no different from the other agents and incomes, will become more evident as we proceed.

A peculiar attribute of land is its relative durability. Its productive powers may, of course, diminish through insufficient care or maintenance, but the falling-off might be in the yield to the artificial improvements rather than in the "original" return from the land itself. Coupled with this is the comparative fixity of supply. It is true that some land has been reclaimed from the sea or former wastes, but for practical purposes the supply may be regarded as inelastic. Neither an increase nor a diminution in the demand can have a material effect on the total quantity of land in existence, though it may, as will be observed more fully later, have an influence on the particular kind of use for which land is offered.

THE "EXTENSIVE" AND "INTENSIVE" MARGIN OF CULTIVATION

Further, as explained in an earlier section, land is especially subject to diminishing returns. Beyond a certain point the yield from a given unit of land begins to decline. In the early days of a community, when the supply of land in relation to the population is very large, the liability to diminishing returns occasions little alarm, for at the first signs of a decline in productivity the cultivators turn to a fresh piece of land and so for a while keep up the average productivity. Their cultivation tends to be of the extensive variety, and they take more and more acres of land into cultivation, starting with the best or most accessible, and proceeding to those tracts that are, under the prevailing conditions, just worth while developing. They thus reach the "extensive margin" of cultivation. But, as the tracts successively brought into use decline in yield, it becomes worth while to cultivate the land more intensively, even though the returns show a certain rate of diminution. Thus an "intensive margin" of cultivation is experienced. Evidently, under perfect conditions, the cultivators will so adjust their extensive and intensive cultivation to the point at which there is equality in the respective returns. When, as in an "old" country, all the land has been appropriated for some purpose or another, the extensive margin apparently loses its significance, and the farmer becomes primarily concerned with intensively cultivating his restricted area to the point at which the cost of raising the marginal amount of produce is just covered by the selling price. All this is in accordance with the general principles of price-determination which we have already discussed.

THE NATURE AND THE RATE OF RENT

The emergence of rent from these conditions can be easily illustrated, though it should be borne in mind that the circumstances of a simplified example are far removed from those of the complex system of to-day, and that it will be necessary later to make certain qualifications and reservations. The traditional method is to imagine an area of uninhabited and undeveloped land, consisting of tracts of varying fertility and accessibility, to which arrive a number of settlers. It is supposed that these settlers will appropriate for themselves the best land, having regard to situation as well as fertility. (There may, for instance, be richer land some miles distance from the place of settlement, but, even if this is known, the cost of bringing the produce all the way may so reduce the net yield that it is more advantageous to cultivate the inferior tracts that are nearer to hand.) Suppose for simplicity that all the best land, as thus defined, is in private possession when a second lot of settlers arrive. The choice is open to the new arrivals of taking the second-best land without making any payment, or of offering a rent to the first-comers for the use of the best land. It needs little demonstration to show that, assuming free bargaining on both sides, the rent will tend to be equal to the difference in net productiveness between the first- and second-grade land. It would not ordinarily be more, for under such conditions the new settlers would be better off cultivating the second-best land rent-free. It would not, as a rule, be less, for this would imply an unusual generosity on the part of the first-comers. The same mode of reasoning may be applied in the event of a further incursion of new settlers or, in the course of time, a growth of the population. The land which formerly could be obtained rent-free now commands its price, while the land originally appropriated bears a still higher rent. Gradually tracts of the third grade, fourth grade, and so on, are brought into use, and the rents of the grades superior to the last taken into cultivation are correspondingly increased.

Though the cost of labour and capital applied to producing a given amount on the best land is less than that required on the inferior land, the respective crops do not, of course, sell for different prices, provided that their qualities are the same. As already demonstrated in the sections on valuation in general, the units are interchangeable and sell for the same market price irrespective of the varying costs that have been incurred on their account.

Rent and Price

The better tracts thus bear a rent that tends to be equal to their respective degrees of superiority over the marginal tracts. The marginal land, it should be observed, is not necessarily the worst land available. Its fertility may be relatively high, but the cost of cultivation and transport may be equally high, thus leaving no surplus. Obviously the price that the produce will fetch in the market is an important, in fact the chief, factor in determining the rent. The higher the price a farmer obtains for his crops, the greater will be the rent he can afford, and, if the landowner takes full advantage of his power, be required to pay for the land.

In Ricardo's well-known words, the price of "corn is not high because a rent is paid, but a price is paid because corn is high. . . . Rent does not and cannot enter into the least degree as a component part of price." This conclusion followed naturally from hypotheses that for long were accepted without question. Prices were determined by the interplay of supply and demand. The supply of land being comparatively fixed, the chief influence on the price of crops tended to be exercised from the side of demand. The price, at whatever level it was determined, would tend to fix the position of the margin, and at this margin no rent would be payable. Hence there could be no element of rent in the price. If the price were to rise, inferior land would be brought into cultivation, and the rent would go up; if the price were to fall, land that had hitherto been marginal would go out of cultivation and the rent would decline.

The conception of "no rent" land is apt to cause difficulty, especially in an "old" country like England, where every acre appears to command a figure. A partial explanation is that the marginal land need not be in the country under consideration. The price of corn in England is determined principally by conditions of supply and demand abroad. There is a world market for cereals, and the margin of cultivation at which the price is said to be settled and at which no rent is paid may be thousands of miles away. Yet even in this country there are tracts of land that are virtually in this position, but they often form part of a larger area for which an inclusive rent is paid. Were it possible to separate the respective parts, the most productive would command a higher rent per acre than that nominally charged, while the least productive would possibly bear no rent at all.

It has to be realized, however, that the rent paid for agricultural land in this country is not entirely determined by conditions of productivity as popularly understood. Many people who acquire land look to "amenity" as much as to financial return and the rent that they pay or that they exact, according to the different circumstances, cannot be expressed in terms of superiority over the marginal land in terms of ordinary agricultural produce. In fact, a new form of margin arises, the amenity value being estimated at a higher level than the purely agricultural value. When all the land is appropriated, and the pressure of the population continues to grow, the land is said to yield a scarcity rent which, as distinct from a differential rent, can be held to enter into price. On this possibility more will be said below.

The general relationship between rent and price can perhaps be better apprehended by considering what would happen if the rents were remitted. The tenants whose expenses were thus cut down could, if they wished, reduce the price of their wares in proportion, but they would be under no obligation to do so. The price, it may be repeated, is equivalent to the costs at the margin of production, and at this margin there is no rent. The remission of rents, therefore, would not affect those conditions under which price was primarily determined. All that would happen, as a rule, would be that the rent that was formerly enjoyed by the landowner would now go to swell the income of the tenant. The prices of the products would remain as before and consumers, as a whole, would therefore be no better off.

Urban rents are created under similar conditions, though the percentage of true rent to gross rental is apt to be very small. The sums charged for the use of urban sites often consist to a large extent of payments for capital improvements. Nevertheless, the same general relationship subsists between rent and price. A district in which high prices can be obtained tends on that account to bear comparatively high rents. If the rents were to be reduced, the prices would not necessarily, on that account alone, be cut down in proportion, if at all. This is true, of course, of pure site rent only; it does not apply to a reduction in gross rentals. If a reduction were made in the latter, it would benefit the marginal sellers along with the others, and marginal costs, and therefore prices, would be correspondingly diminished.

SECTION 36

SURPLUS ELEMENTS IN INCOMES

The Ricardian doctrine of rent has been modified in several directions. Many economists question the conclusion that rent does not enter into price. Others apply the general principle to other forms of income, dividing them into "costs" and "surpluses" according to whether the respective parts are price-determining or are price-determined.

QUALIFICATIONS OF THE RICARDIAN DOCTRINE

In the previous section we stated the traditional theory of rent and its relation to the determination of price, adding little by way of criticism and qualification. When Ricardo enunciated his theory over a century ago he was endeavouring to find a special explanation for the payment made for the use of land. A special explanation was considered necessary, for this payment did not appear to be compatible with the cost of production theory of value then prevailing. The other factors of production, as then formulated, had their respective "costs." Labour would not be forthcoming unless it was paid for; unless the wage was sufficient, not only for the subsistence of the workers, but also to bring up a new generation. The continuous supply of capital, too, depended on an adequate payment of interest. The quantity of these factors varied more or less with the rates of the respective rewards, which could thus be expressed in a form consistent with the contemporary theory of value. Land, however, seemed to belong to a separate category. It was there from the beginning, and, apparently, would be there to the end. The quantity in existence would remain very much the same irrespective of the amount of rent that was paid. Different from the other rewards, a high rent would not evoke a greater supply of land. Explanation therefore had to be sought on different lines. The industrial system was fast developing, and the sympathies of the economists and politicians of the day were more with the new capitalist manufacturers than with the landed classes who appeared to be battening upon the increasing wealth of the country. Wittingly or otherwise, Ricardo and his followers provided the apologists of the new industrial order with a powerful instrument wherewith to attack the landowning classes, and even to-day the rent doctrine, suitably qualified, is employed by those who would appropriate "unearned increments" for the public benefit.

The Ricardian theory has been modified in several directions. Many economists have concentrated their criticism on the principle itself, and have attempted to show that the payment of rent does not differ fundamentally from the other forms of income; that land and its reward do not stand in the unique position claimed for them; that the notion that rent plays no part in determining prices is not altogether sound. Others, notably Marshall, have attempted to expand the doctrine in such a way as to throw light on distribution in general. Different from their predecessors, they hold, not that the payment is peculiar to land alone, but that an element of rent, or something like it, is to be found in all other forms of income.

RENT, PRICE AND TURNOVER

There is no need for us to enumerate all the criticisms that have been directed against the Ricardian theory of rent: Some of them have proved ephemeral, being more concerned with the manner of expression than with the central idea. It is, for example, easy to show that high rents may go with low rather than with high prices. A hackneyed illustration in the popular exposition of the argument is to take a fashionable shopping centre in which high prices can be charged and heavy rents therefore obtainable. But there may be, and often is, in such districts, a branch of a multiple store which charges the same prices for its wares as its sister stores in poorer and less fashionable quarters. Conversely, it is not unusual to find prices of certain goods fairly high in centres where rents are comparatively low. The explanation, of course, is to be found, not in the profit on each article sold, but in the total volume of business and the resultant aggregate gain. The firm owning the above-mentioned store can afford to pay the high rents because it is able to effect a larger turnover of business than in a street where shoppers are not so numerous. The assistants are more continuously occupied, while the goods, owing to rapid replacement, are less liable to deterioration. The fact that the prices are low, while the rent is high, does not constitute a real criticism of the above deduction from the rent doctrine. It would, in such circumstances, be truer to say that high rents are the result of high gross profits rather than of high prices, but the essence of the argument remains unaltered.

Another criticism of the relationship between rent and price is to the effect that, while particular rents are admitted to have no bearing on prices, rents in general cause prices to be higher than they need be—higher, for instance, than they would be if it were possible, under a system of State control, to pool all the output, and, from the surpluses of the supra-marginal units, subsidize the infra-marginal units. In this way, it is claimed, the total amount of produce would be greater and the price less. Thus, indirectly, rent as a whole may be held to be a price-influencing factor. The limitations of this argument, however, are readily seen. While it may be true that the spread-over of rents in this fashion would cause prices to be lower, the principle of the theory is not on that account disturbed. All that this theory states is that under prevailing conditions the owner of the better land is enabled to appropriate a rent equal to the superiority in fertility or situation over the marginal unit. The price of the product is equivalent to the cost of the margin at which no rent is payable. If the Government found it feasible to appropriate rents, and to use the proceeds to assist production on the sub-marginal units and thus to lower prices, a new set of conditions would be introduced, and the relationship to prices would be changed accordingly.

Alternative Uses of Land

A more vital criticism of the traditional doctrine is to be found in the fact that land can normally be used for more than one purpose, and that conditions may arise in consequence under which the position of the margin is apt to influence, as much as be influenced by, the price charged for the product. For example, a farmer might regard a certain tract as only just worth while cultivating for the growing of wheat. That tract, from the point of view of wheat growing, would be marginal and would bear no rent. But the same tract might be capable of yielding a surplus if a less costly crop were grown on it, or if it were used for pasture. The rent that it would bear for the inferior use would necessarily influence the marginal use made of it for growing wheat. The position of the margin might, in these circumstances, be influenced by the rent that had to be paid, and to that extent rent might be regarded as a price-determining factor.

Similarly, if a railway company wished to lease or purchase a stretch of land in order to avoid a long and expensive detour, the margin under such conditions would be very high indeed, and if the landowner took full advantage of his position, the rent, or capitalized purchase price based on it, would be correspondingly heavy. If one still maintained that the rent paid for this land was not in any way a price-influencing factor, it would be necessary to show that the fares and freight charges of the railway companies were determined by marginal railway services in respect of which no rent was paid. It is well known, however, that railway companies have often had to pay inflated sums for the right of laying their tracks over certain stretches of land. The amounts thus laid down are naturally reckoned among the costs, and the charges are influenced accordingly. In such cases the rent, which is of the "scarcity" rather than "differential" kind, might be said to exercise a bearing on price not allowed for in the traditional doctrine.

SURPLUS ELEMENT IN INTEREST

As previously intimated, the rent theory has been expanded by certain economists so as to embrace part of the gross return to the other factors of production. As land and capital have much in common, the connection between rent and interest may be considered first. The inseparability of rent of land in its original form and interest on long-invested capital has already been remarked. Much of the so-called rent is really a reward to the capital spent in improvement. But the connection can be shown, in certain circumstances, to be much closer than this. There are several types of capital instruments that are so durable, and come into and go out of existence so slowly, that for comparatively long periods their quantity may be regarded as virtually fixed and subject to similar considerations as land itself. During a war, for instance, the production of many commodities, judged to be essential according to peace-time standards, is inevitably curtailed. Building, for example, comes almost to a standstill, and, on the termination of hostilities, the supply of dwelling-houses is apt to be far short of the demand. The owners of houses are thus tempted to raise their rentals, and, where permitted by the Government, usually do so. Measures for the control of house-rents may be passed to prevent the owners from making an excessive charge. Those owners, however, whose property is not subject to public regulation, or becomes decontrolled, may charge a rental much in excess of that with which, under less favourable conditions, they would have been satisfied. This excess, for the time that it can be charged, bears a strong resemblance to a true rent.

Other illustrations of the same type readily spring to mind. The demand for a certain kind of commodity, owing perhaps to a vagary of fashion, may show an unexpected increase. The article in question, however, may not be one that can be quickly turned out in larger quantities. Possibly it requires expensive machinery and other implements which one is reluctant to install in view of the uncertainty of the demand and the liability for this to contract as quickly as it expanded. In the meantime the price of the article may soar, and the owners of the existing stocks and machinery may make abnormal profits. Had they first invested their money on the chance of such an event, and stood therefore to lose as much as they made, the profits now gained might largely be described as earned, and not partaking of the nature of a rent. But circumstances frequently arise in which the owners of specialized and not quickly reproducible goods reap a harvest without any particular exercise of enterprise or good management. The additional income due to their good fortune resembles a rent more than a true interest or profit. It is not a pure rent for the reason that the supply of the commodity concerned is not incapable of increase, and that the extra revenue may in the course of time dwindle to nothing. Many writers, following Marshall, designate such income as a "quasi-rent"; others describe it as a "surplus" or an "unearned increment."

SURPLUS ELEMENT IN PROFITS

The notion can be extended, though with increasing difficulty and uncertainty; to part of the profits of all supra-marginal firms. Suppose, for instance, that a number of firms are engaged in making a standardized article, free of patents and other restrictions. The price, let us imagine, is 5s. At this figure firm X can just manage to carry on, its unit cost of production, including the minimum profit without which there would be no point in continuing in business, being equivalent to the price charged. Firm Y, owing to some special advantage in technical and administrative skill, is able to turn out the article at 4s. 9d., yet still make its minimum profit. Firm Z, enjoying still better advantages, has a unit cost of only 4s. 6d. If competition were very keen, the price might successively be reduced to 4s. 9d. or 4s. 6d., but if the aggregate demand for the commodity at 5s. were sufficient for a time to absorb all the output of the three firms, it would be more profitable for firms Y and Z to continue to charge that figure than to fix a price nearer to their own costs. These firms thus enjoy a "producer's surplus" which, it is claimed, has a certain resemblance to rent. The extra profit of 3d. or 6d. does not, according to the above reasoning, enter into the price, which is determined at 5s. by the costs of the marginal firm.

It may be maintained, on the other hand, that the very possibility of these high profits being made acts as an inducement to people to enter the trade; that if the average profits were at a lower level, the trade would be less attractive, and the production and service of a lower order. Viewed in this light the high profits would be different from rent in that they exercised some influence on the volume and character of production. Whereas a remission or contraction of rent would not, according to the common argument, affect the supply of land, a reduction in profits would be liable to react adversely on business enterprise.

The rent analogy is closer when we come to the profits of monopoly. Indeed, as will be evident from the foregoing, all rents depend on some degree of monopoly for their existence. The trust or other organization possessing some control over the goods offered for sale is, from one point of view, in a very similar position to the landowner. The price is fixed not so much by reference to cost as to "what the traffic will bear." Monopoly prices are not high because the monopolist's profits are high; his profits are high because he is in a position to charge high prices. Subject to the various limitations on the power of the monopolist examined in a former section, a certain relationship between economic rent and monopoly profits can be established.

Surplus Element in Personal Incomes

In the same way as one area of land possesses a natural advantage over another, so one person is better endowed than another, and on that account enjoys a larger income, whether in the form of a profit, salary or wage. In the above example, in which three firms had varying costs of production of the same standard article, the reason might have been found in the different qualities of the respective directors. Similar variations might be experienced in the incomes of professional workers and of wage-earners. Two men might begin on equal terms and with the same opportunities, and yet one of them might go ahead of the other and make a much larger income. The differences in the earnings of professional and manual workers are commonly attributed to the expensive training undergone by the former. In so far as the training makes them more productive there is an explanation of the higher reward. The superiority in earning-power, however, is often out of all proportion to the interest equivalent on the invested capital; more likely it is due to the comparative scarcity of the highly qualified persons who were fortunate enough in their early years to be given an expensive training.

It was natural that the rent doctrine, having developed so far, should be further extended to those parts of personal incomes that could be attributed to inherent or acquired qualities that placed the owner in an advantageous position. The notion of "personal rents," however, was soon seen to have its limitations. Even when the theory was restricted to inanimate factors of production, it was not always easy to single out the "unearned" part of the gross return, but when it was applied to the personal agents the relationship became even more tenuous. Where is one to draw the line between the part which is the "cost" (i.e. the minimum which must be paid to induce the supply of the service) and that which constitutes the "surplus"? It is easy to point to large incomes made by highly skilled people, whose services are in great demand, and to say that the amounts are in excess of the minimum with which these people would, under less favourable conditions, be satisfied, but there is little to guide one in distinguishing between the two parts of the gross income. Individual differences in temperament and outlook make it difficult to lay down any general rule, for even if the dividing line could be ascertained for one person, it would afford but little assistance in estimating for another.

The rent doctrine, however, with all its limitations and qualifications, does help to throw light on the system of distribution as a whole. Though a rigid division of all incomes into "costs" and "surpluses" may not be practicable, the conception is of service in suggesting that, in any scheme for redistribution, care should be taken, as far as possible, not to encroach on those rewards that are a prior condition of sustained production, but to concentrate on those types of income which, through extraneous or fortuitous circumstances, benefit the receiver without exacting any specific service from him in return.

SECTION 37

REDISTRIBUTION THROUGH PUBLIC EXPENDITURE

The income of the community is very unequally distributed, though there has been a certain improvement in favour of the earning classes during recent years. Public expenditure on the social services has been one of the chief agencies in bringing about this improvement. The question of redistribution cannot be considered apart from the possible reaction on productive capacity.

INEQUALITY OF DISTRIBUTION

THAT the social product is very unequally apportioned is evident to the most casual onlooker. Inequality is to be found in all nations and at all times. Statistical investigations confirm the impression that one gains from general observation. Twenty years ago Professor Bowley estimated that 1 per cent of the income receivers took about 30 per cent of the national income; that 5 per cent of the income receivers took over 40 per cent of the total income. Since then the ratios have undergone a moderate change, the net proportion going to the well-to-do being now rather less than a generation ago. Inquiries in the United States have shown similar results, except that the concentration is not quite so acute as in this country. The National Bureau of Economic Research issued in 1922 a statement showing that 1 per cent of the income receivers in the United States received 14 per cent of the total national income. Differences in the methods of calculation in the two countries, however, prevent a rigid comparison of the results from being made.

But bald statements of percentages such as these are not very instructive, for they give no indication of the character or composition of the respective shares. More helpful, though only to a limited extent, are the estimates of the proportions commonly described as "earned" and "unearned." In *The National Income, 1924*, Professor Bowley and Sir Josiah Stamp showed that the percentage of the social income taken in the form of wages rose from 43 per cent in 1911 to 44 per cent in 1924, and that other earned income increased its proportions from 32½ to 34 per cent; i.e. the total earned income rose from 75½ to 78 per cent. (The share taken by "labour" in the United States was estimated by the National Bureau to be about two-thirds.) The total unearned income diminished, therefore, from 24½ to 22 per cent during the thirteen years. The actual falling-off in the unearned share, however, was probably greater than this. The income derived from the employment of one's own capital in a private business is technically regarded as earned, but on conversion of the business into a company an income that formerly was viewed as a salary would now to some extent be classified as interest. During recent decades there has been a considerable amount of business reorganization, with the result that much income that used to be designated as earned comes now in the unearned category. On this account the ratio representing the unearned income in 1924 is kept higher than it really should be. If it were possible to make a clear division of the total, the proportion of earned income would probably be greater than is indicated in the above figures.

PUBLIC EXPENDITURE AS AN ALTERNATIVE TO WAGES ADVANCES

Considerable additions to the wages of the working classes have been made in recent times through the agency of the social services. In 1880 the value of these services was only about 8d. in the £ of wage-earner's income. By 1911 it had risen to 1s. 10d., and, according to Professor Henry Clay's estimate, reached 2s. 6d. in the £ by 1924.

At the present time the proportion is over 15 per cent, which is appreciably greater than the percentage paid by the average wage-earner in taxation. The benefits from pensions, health and unemployment insurance subventions, poor relief, education, and several other public schemes, have thus assumed a place of the first importance in the real income of the majority of the population.

The advocates of the social services are not all inspired by the same motive. Some frankly regard them as means to the socialist end. Others, though not sharing the socialist view, believe that there are certain necessary services in which public is likely to prove superior to private expenditure. They maintain, for example, that there are many essential commodities which many people would not voluntarily acquire for themselves, even if they had the means. The individual is not always the best judge of what is best in the long run for himself and his family, and, where private expenditure fails to provide such necessaries, public intervention and supply are justified. They aver, also, that these services can often be provided more efficiently and economically when they are regulated by a public department, which may have the advantage of centralized large-scale organization, as against scattered small-scale activities with the liability to overlapping and waste.

But more important from our present standpoint is the submission that the addition to the worker's real income by means of public expenditure on social services is to be preferred on some grounds to direct increases in standard money wages. Up to a point, as we have previously explained, higher wages may pay for themselves, both by increasing the worker's efficiency and by stimulating the employer to make more economic use of the resources at his disposal. But, after that point, additions to wages mean an increase in the employer's costs of production, and every time the standard rate is raised the marginal firms are severely affected. It is here that the advantage of indirect additions to income, through the agency of taxation and public expenditure, is claimed. About two-thirds of the State revenue is obtained from direct taxation in one form or another, and the proportion tends if anything to increase. A distinctive feature of the income tax, which is the principal agency of direct taxation, is that it is capable of graduation in progressive degree as the net income of the taxpayer increases. Firms or individuals that fail to make a profit are not, of course, required to pay tax. The marginal firms also escape, while those making small profits pay only at a comparatively low rate. Thus, the cost does not fall so heavily on the firms that are struggling for existence as it would do if the workers obtained direct wage advances wherewith to acquire the equivalent benefits.

PUBLIC EXPENDITURE AND PRODUCTION

It may reasonably be objected to this method of augmenting the worker's income that the relationship between his specific productivity and his reward becomes increasingly indirect and remote, and that the wages of labour tend to lose much of their meaning. What, the critic might ask, is to prevent the worker from relying to a diminishing extent on the product of his own labour, and to a growing extent on the public services? Is not such a practice liable to have detrimental effects on the will to work and on the volume of wealth produced? Is it not a reversion, in a sense, to the notorious Speenhamland poor relief policy of a century ago, under which the assistance from the rates tended to become an important source of income of those who were in employment, as well as of those who were out of work?

The problem turns largely on the effects on production in general. In estimating these effects, however, it is necessary to take a long view. Compare, for example, the expenditure in keeping children a year or two longer at school, and that in pensioning off people a year or two before the present pensionable age. Both have the effect of limiting the years of employment. At the one end of the scale, the age of entering industry is deferred. At the other end, the retiring age is brought forward. A considerable body of opinion at the present time is in favour of one or both of these projects as a means of dealing with the unemployment problem, if for nothing else. But, from the standpoint of ultimate productiveness, the schemes have not the same justification. A longer schooling of the proper kind is almost bound to have beneficial effects on productive capacity in later years. Old age pensions, on the other hand, are to be defended more on humanitarian than on strictly economic grounds. Indeed if the pensions were large enough, and were granted at a sufficiently early age to encourage people to give up their employment while still proficient, the result might be a distinct economic loss. On the contrary, in so far as their places were taken by younger workers, and the pensions were therefore more than offset by the saving in unemployment benefit or relief, there would be an appreciable monetary gain, quite apart from the advantage of reducing unemployment among the young and able-bodied, and giving some leisure to those in their declining years.

EFFECTS ON THE BENEFICIARY AND THE TAXPAYER

The economic effects of the social services depend to some extent on the personal character of the beneficiary. Where the grants are large enough, or are made under such easy or lax conditions as to make it a matter of small concern to an able-bodied person whether he exerts himself or not, the limits of wise expenditure have obviously been passed. A common criticism of the unemployment insurance scheme has been the difficulty of distinguishing between those who are genuinely in search of work and those (usually exaggerated in number) who prefer the "dole" to work. Similarly, there are many who contend that public expenditure on the maintenance of school children is liable to have undesirable effects upon the industry and the sense of responsibility of the parents.

It is idle to deny the existence of such people who will take undue advantage of these services. The opportunity for abuse, however, is lessened when, and where possible, the assistance is given in kind and not in money. Where the benefits take the form of goods which the recipient would in any case have had to buy, either with his own wages or with the money received from the State or local authority, there is little to choose between the two ways of granting assistance. But where they are of a kind which a person or his dependants really need, but which would not in the ordinary way be acquired, the deterrent to effort and responsibility is not so serious, and the liability to a contraction in the total production is not so great. Few now would maintain that every individual is the best judge of all his needs. Even if he were, his resources would not always be adequate to provide for them. In such cases the State can supply the necessary services out of public funds with little fear that the recipient will on their account diminish his economic activity.

The specific effects on the taxpayer are equally difficult to estimate with any accuracy. The reactions are partly physical, partly psychological. They are physical in so far as taxation encroaches upon the supplies of capital necessary for present and future production and diverts consumption from useful to comparatively wasteful channels. They are psychological in so far as people are discouraged from accumulating capital or from embarking on new ventures. Often the two sets of reactions are closely bound together, and are cumulative in their joint effects, which, in a country like Great Britain especially, may have international repercussions. The events of August, 1931, showed how closely the social and financial conditions of the nation were interwoven, and how a maladjustment of the entire mechanism culminated in a political crisis of the first importance. To enter upon a discussion of such matters would take us beyond the set limits of the present work, but enough has been said, perhaps, to indicate their close bearing on the efficacy of the industrial system.[1]

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[1] For an inquiry into the nominal and real cost of the social services, and an analysis of the economic effects of taxation, reference may be made to the author's *Taxation: Its Incidence and Effects* (Macmillan, 1931).

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